

THE INTERACTIVE IBM PC AND COMPATIBLES GUIDE



JULY 1986

\$4.00

VIDEOTEX

Linking PCs to the world

9.25: News update—Trade war explodes
9.28: Stockwatch—buy! buy! buy! 9.30: London—\$A fights
9.32: Futures—coffee crop calamity
9.33: PC users have higher incidence of becoming millionaires, say
9.37: South Africa faces heavier sanctions
9.43: Have a nice day

Shift into overdrive
—top Turbo Pascal utilities

IBM COMPATIBLE

- PC
- 34/36/38
- 3274/3276

- * Plug compatible
- * Volume discounts
- * 200 LPM to 3000 LPM
- * Quick delivery

- * Matrix, Laser, Band
- * Colour Printing
- * Service in over 40 locations
- * On-site warranty

Need to know more? Call or write today.

To: **Impact Systems Pty. Limited**
7 Gibbes Street,
Chatswood, NSW 2067
Telephone: (02) 406 6611

The Computer System I Use _____

Name _____

Title _____

Company _____

Street _____

City _____ State _____

Post Code _____

Tel. () _____



Reliable Band Printers
400 LPM to 3000 LPM.
Made by Hitachi Koki.
Common bands.
Up to 4000 hours MTBF.
Field upgradeable.

Versatile Matrix Printers
200 LPM to 600 LPM.
Forms design.
Bar coding, Graphics.
Label generation, OCR.
Colour.

Brilliant Laser Printers
Super quiet.
Versatile performance.
Multiple emulations.
Up to 2 MB memory.
Forms overlay feature.

Sydney	(02) 406 6611
Melbourne	(03) 592 4066
Brisbane	(07) 229 9510
Canberra	(062) 48 9639
Adelaide	(08) 79 4232
Perth	(09) 481 0027

Impact Systems Pty. Limited, 7 Gibbes Street, Chatswood, New South Wales 2067



LASER 400

\$3995



Australian by design and without equal

Without Equal

Recent technical reports have rated Impact's Laser 400 superior to the HP LaserJet, Digital LNO3, Canon, Ricoh, AWA, Xerox and QMS product offerings.

Today's Computers (Dec/Jan '86) said:

"Our choice of the best buy... We chose Impact."

Your Computer (Jan '86) said:

"The operator panel on the Impact is a dream."

"... a particularly competent and responsive organisation."

"It's the sort of sensible approach printer manufacturers have always seemed to be able to avoid."

Your Computer (April '86) said:

"... overall it has the best features-per-dollar ratio of the desk top lasers."

"... The judges couldn't believe it was a local product... they assumed it was an import."

Lightning Quick

Impact's Laser 400 prints up to 4 pages per minute! This is up to 10 times faster than the best letter quality printers. You can now forget about waiting for long reports and documents - they are now available on demand.

Whisper Quiet

Impact's Laser 400 is so quiet that you will wonder if it is actually switched on. The Laser 400's whisper quiet operation is ideal for the modern office. No longer will you have to buy expensive acoustic covers.

Versatile and Creative

Alternate fonts can be selected to distinguish report headings, subheadings, superscripts, subscripts, footnotes and you can even emphasise certain text by printing in italic mode. Not to mention graphics. Intermixed with your text you may print histograms, pie charts, bar charts, circles and other graphical representations.

Fonts/Typefaces

The Laser 400 contains the most powerful font processor in the industry today. The user is able to transform existing fonts into thousands of different fonts and typefaces by varying bolding, rotational and scaling aspects.

Field Upgradeable

As your printing requirements expand, so too will the Laser 400. With more fonts, more memory, more emulations. In fact, our Laser 400 is the only field upgradeable machine on the market.

Impact

Australians providing superior technological solutions for Australia and the world.

Powerful shareholders like Westpac through BLECapital, Aetna Life, Security Pacific Bank, BT, Pratt, CDFC and Macquarie Bank.

Providing service in over 40 locations throughout Australia.

IMPACT SYSTEMS LIMITED

Sydney 406 6611 Melbourne 592 4066 Canberra 48 9639 Brisbane 229 9510 Adelaide 79 4232 Perth 481 0027



TECHNICAL EXCELLENCE FROM DOWNUNDER



computer enhancements pty. ltd.

9th Floor, 505 St Kilda Road, Melbourne, 3004, Australia
Telephone (03) 267 7829, (03) 267 4755

UPGRADE YOUR PC

Make it stronger than the AT

ALL PC/XT COMPATIBLE COMPUTERS.

GRAFX-PRO

132 COLUMN CARD

- Monochrome graphics (132 x 44)
- Parallel printer port
- Spectrum graphics card compatible
- 4 layers

NETWORK CARD

- No dedicated file server
- Floppy disk sharing
- Transparent to DDS
- Trans-Net Spool (Printer Files Spooling)
- Enhanced networking DOS command

PC SPEED

SPEED CARD

- Increases IBM PC speed by over 200%
- Ultra-fast 10MHz 8086
- Simple plug-in installation
- Compatible with existing software; Lotus 1-2-3, Wordstar, dBASE III, etc.

SPEED + TURBO — 286

- Increases PC speed by 900%
- 8MHz 80286 Processor
- Socket for 80287
- 1MB RBM installed
- Expandable 2MB on board
- Software selectable 8088 or 80286 operation
- Runs all popular programs

ZAP

- Speeds up disk I/O access
- Disk I/O intensive progs like dBASE II will run 2-4 times faster
- Easy to install
- Safer than RAMDISK

GRAFX-PRO +

- Fully IBM EGA compatible
- Full 256 RAM screen buffer on board
- 640 x 350 res in 16 colours
- Extra printer port

1.2MB FLOPPY CONTROLLER

For IBM-PC/XT or PC/AT will read/write 360KB or 1.2MB disks in drive

MINI - AT MOTHERBOARD

- Replace your PC/XT M/B & upgrade to PC/AT
- Fits existing mounting
- 6/8MHz operation

INSTRUMENTATION/ CONTROL

- Full range of cards
- A/D, D/A
- Optical input
- Relay output
- High speed A/D
- JTR thermacouple, etc

COMPUTER MEDIA— TRANSCRIPTION/COPYING

- Software duplication, copying and formatting for virtually all popular computers.
- Downloading 8" CP/M formats to over 200 5¼" CP/M formats.
- Conversion and downloading from CP/M to MS-DOS/PC-DOS.
- Rapid turn around.
- Reasonable charges.

STOP PRESS

200w uninterruptible
power system

- ½ cycle transfer time.
- ½ hour typical shutdown time.
- Attractive case — matches PC case.



commercial and professional microsystems

9th Floor, 505 St Kilda Road, Melbourne, 3004, Australia.

Tel: (03) 267 7829



MANAGING EDITOR

David Koch

EDITOR

Ian Robinson

SENIOR WRITER

Les Stein

CONTRIBUTING WRITERS

Vi Adelle

John Green

Robin Howells

Clive Lassiter

Stephen Murray

PRODUCTION EDITOR

Robin Bowerman

ART DIRECTOR

Grant Slaney

PUBLISHER

Barry Telfer

NATIONAL ADVERTISING MANAGER

John McGaulley

ADVERTISING MANAGER (Victoria)

Paul Andrew

Viatel mailbox 360241220

Circulation enquiries (03) 67 8020

Editorial offices — MELBOURNE: 392 Little Collins Street, (03) 602 4122, telex 38995. SYDNEY: 19 Hamilton Street, (02) 235 6700, telex 20121. CANBERRA: Press Gallery, Parliament House, (062) 73 1184. NEW YORK: 1500 Broadway, New York, NY, 10036, (212) 398 9494. LONDON: Associated Press House, 12 Norwich Street, London EC 4A 1BH, (01) 353 9321, telex 51 2628386.

Advertising Offices — SYDNEY: John McGaulley (02) 235 6609, 2nd Floor, 19 Hamilton Street. MELBOURNE: Paul Andrew, 4th Floor, 392 Little Collins Street, (03) 602 4122. ADELAIDE: Ronni Dee, John Fairfax & Sons Limited, 101 Waymouth Street, (08) 212 1212. PERTH: Tony Allen, Allen & Associates, 7 Fore Street, (09) 328 9833. BRISBANE: Greg Walton, Geoff Robinson Media Services Pty Ltd, 457 Adelaide Street, (07) 839 6033.

Overseas representatives — TOKYO: Yuji Takeda: CRC Kita-Otemachi Bldg, 3rd floor 4-13 Uchi-Kanda 1-chome Chiyoda-ku, Tokyo 101, Japan (03) 27 00251, telex J22308 Nikkei. NEW ZEALAND: Jill Wood, Media Brokerage Limited, Level 2, 35 Torrens Terrace, Wellington, NZ, 84 5964. UNITED STATES: Del Stella, president, The N. DeFilippes Corporation, 383 Fifth Avenue, New York, NY, 10016, (212) 684 7557, telex 23 236869.

PC Australia is a BRW Publications production. **Group managing editor:** Robert Gottlieb. **Group publisher:** Steven Congerton.

Recommended retail price: \$4.00 in Australia. All PC Australia's material is copyright. Reproduction, in whole or part, is not permitted without written permission from the managing editor. Published by John Fairfax and Sons Limited, 235-243 Jones Street, Broadway, Sydney, NSW 2007, Australia and David Syme & Co Limited 250 Spencer Street, Melbourne, Vic. 3000, Australia. Typeset and made up by Quadricolor International (Aust) Pty Ltd, 3 Lake Drive, Dingley, Vic. Printed by Macquarie Publications, 51-59 Wheelers Lane, Dubbo, NSW. ISSN 0816-6471.

TODAY... 10 or 20 MBYTE HARD DISKS JUST CAN'T COPE.



ROOM TO GROW Choose from our range of formatted storage capacities – 26 MByte, 44.6 MByte and 71.3 MBytes. Big enough for Local and Wide Area Networks.

PERFORMANCE Linear voice coil technology yields a 28msec. average access time. That's about 4 times faster than 10 and 20 MByte drives.

BACK UP Support when you need it. Professional assistance from the industry's most competent team.

DANEVA We're dedicated to the science of data storage and management.

Powerful PC software like Lotus 1 2 3¹, dBase III² and Symphony¹ gobbles up disk space at an incredible rate. That's why Daneva packages high performance hard disk drive kits with capacities up to 85MBytes.

Daneva kits are complete, system proven and easily installed ... no fiddling around with complex set up procedures and cryptic manuals.

That's only half the story. Daneva is developing a solid reputation for excellence in storage system hardware and software support for the whole range of IBM PC/XT, AT³ and their compatibles.

¹ Lotus 1.2.3. and Symphony are registered trade marks of the Lotus Development Corporation.

² dBase III is the trade mark of Ashton Tate.

³ IBX PC/XT, AT[®] are the registered trade marks of Industrial Business Machines.

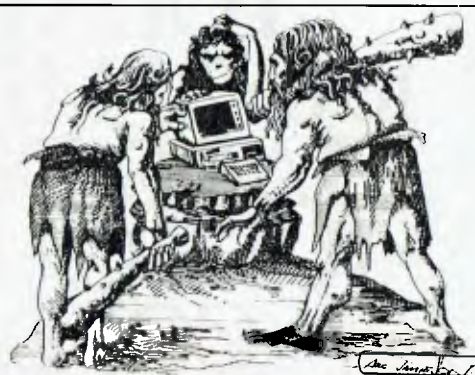


64-66 Bay Road
Sandringham
Victoria 3191
Australia
PO Box 114
Telephone (03) 598 5622
Telex AA34439

47 Falcon Street
Crows Nest
NSW 2065
Australia
Telephone (02) 957 2464
Telex AA20801



SPONSORS OF
TASKFORCE
1987



FEATURES

Videotex software for the PC

28

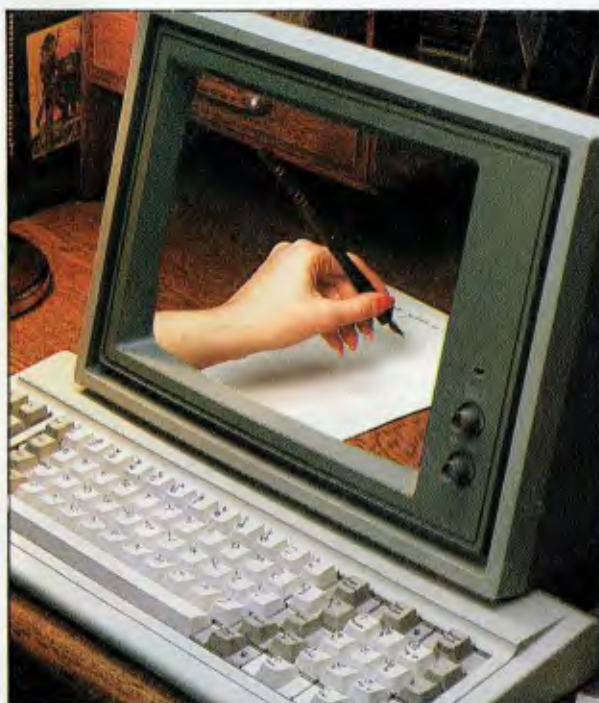
There is a wide variety of videotex decoding software on the market, from simple routines which come bundled with modems to full-blown editing station packages costing thousands of dollars. Ian Robinson examines several of the more popular PC videotex communications programs.



Work smarter with Turbo Pascal

40

Turbo Pascal has over half a million legitimate users worldwide and as you would expect, a large number of add-ons, enhancements and utility programs have appeared, all hoping to take advantage of this enormous market. Peter Feldmann examines a diverse cross-section of these Turbo utilities.



DEPARTMENTS

From the editor's screen

11

Ian Robinson introduces the inaugural PC Australia Awards for Technical Excellence to be presented early in 1987, based on readers' written submissions.

Guest editorial

12

Marketing an information service on videotex is more complex than you may imagine. Maureen Murphy outlines the factors to consider in preliminary market research when planning a videotex service.

Letters to PC

15

The questionnaire in the June issue has helped to generate even more mail.

PC News

19

Early questionnaire results indicate the PC News pages are one of the most popular PC Australia departments.

Lassiter's brief

25

Clive Lassiter, who gave an impressive speech at a recent meeting of the Sydney PC User Group, on his pet subject — PC compatibles looks at the Mitac PC.

PC essay

59

Following the theme of our cover story Paul Budde gives a brief outline of the history of the new business medium — videotex.

New products

63

If it is new and PC compatible, look for it here.

User-to-user

71

Stephen Murray examines more readers' hints, tips and patches — why not send him a letter yourself?



Gateway to a new world

53

Tony Ward explores Gateway, the latest PC videotex software from the Australian company, Cybersoft. Gateway's features include the ability to 'search and grab' videotex frames automatically, text conversion for word processor linking and a friendly menu structure.



Spreadsheet clinic

77

More spreadsheet magic from PC Australia readers, selected and tested by resident expert John Green.

Tech notebook #19

81

Ian Robinson selects another single page solution for adventurous PC programmers.

BBS file

83

Our on-line investigator Robin Howells explores another popular PC bulletin board service.

The PC bulletin board

84

The Australian PC community notice board. If you have anything important to add, call Ian Robinson on (03) 602 4122.

The videotex page

87

Vi Adelle has achieved a life-long ambition with this issue's videotex cover story. For all the videotex news check out her report.

Coming up

89

The August issue of PC Australia will feature a comprehensive review of PC utility programs by senior writer Les Stein.

The Stein way

90

Les Stein returns to the land of opportunity after a hectic overseas trip and examines the differences between local and overseas PC industries.

The features appearing on pages 41, 81 and the illustration on page 40 are reprinted by arrangement with Ziff-Davis Publishing Company, New York NY. Copyright 1984-85 by Ziff-Davis Publishing Company. All rights reserved. The PC logo is a trademark of PC Communications Corp, a wholly-owned subsidiary of Ziff-Davis Publishing Company.

DISCWARE

the biggest range of PC products AT THE BEST PRICES

YOUR EGA SOLUTION:

Quadram QuadEGA + Board and TVM Monitor \$1895

EGA: 640 x 350, 16/64 Colours, CGA: 640 x 200, non-glare etched screen, 0.31mm dot pitch. Quad EGA + also supports Hercules monochrome graphics.

Olivetti M24 Twin Disk

Drives \$3800

640KB RAM, 2 x 360KB floppy disk drives, hi-res green or amber monitor, parallel and serial ports, 6 month warranty.

Olivetti M24 Hard Disk

\$4900

640KB RAM, 20MB internal hard disk, 360KB floppy disk drive, parallel and serial ports, hi-res green or amber monitor, 6 month warranty.

SUPER SPECIALS FOR THIS MONTH ONLY

Lotus 123 rel. 2 \$835.00 this month only **\$Call**
Seagate 20 MB H/disk .. this month only **\$949.00**

dBase III+ \$1095.00 this month only **\$675.00**
Intel 8087.2 \$489.00 this month only **\$330.00**

Kaypro 2000

fr **\$2995**

768KB RAM back lit LCD screen option
3.5" 720KB built-in floppy and RAM disk,
real-time clock. 8087 option + \$269.00,
hard disk option \$call, bundled software.

Olivetti M24 SP

\$Call

8086 @ 10MHz, 640KB, 20 MB, limited stock.

YOUR COMMUNICATIONS SOLUTION:

Imagineering's **Le Modem** by NetComm **\$449.00**

300 baud, 1200/75 baud, auto-dial auto-answer, 1/2 card, totally internal.

Toshiba P351 Printer

\$call

The finest 3-in 1 printer Toshiba made: 288 cps draft mode, 100% letter quality, 180 x 360 dots/in graphics! 24 pin dot matrix, downloadable fonts, true letter quality.

Toshiba T1100

\$call

256KB RAM, 3.5" 720KB floppy, RGB, 512 KB option, 5 1/4 floppy option.

Canon Laser Jet

\$call

IBM SOFTWARE

	R.R.P.	Our Price
Borland's Superkey	149.00	99.00
Clipper Compiler dB III	995.00	710.00
Concurrent PC DOS 4.1	555.00	399.00
CopyllPC	95.00	69.00
Copywrite	125.00	85.00
Crosstalk XVI	249.00	149.00
dBase III plus	976.00	670.00
Easy!	240.00	215.00
Enable	1100.00	815.00
Fastback	250.00	150.00
Framework 2	1095.00	745.00
Gem Draw/Desktop Top	395.00	299.00
Graftalk	670.00	570.00
Harvard Total Project Manager	649.00	490.00
Harvard Presentation Graphics	625.00	499.00
KnowledgeMan 2.0	945.00	735.00
Lattice 'C'	790.00	690.00
Lotus 123 rel. 2.0	835.00	499.00
Microsoft Word	599.00	430.00
Microsoft Word + Mouse	799.00	599.00
MultiMate 3.3	725.00	525.00
Norton Utilities 3.1	199.00	129.00
Open Access	995.00	660.00
Paradox	1095.00	769.00
PC Alien	95.00	82.00
Reflex	199.00	140.00
Symphony 1.1	1095.00	699.00
Side Kick ver. 1.5	99.00	75.00
SmartKey 5	79.95	69.00

IBM SOFTWARE

	R.R.P.	Our Price
Smart Software System 2.0	1045.00	830.00
TK! Solver 1.6	500.00	399.00
Timeline ver. 2.0	760.00	545.00
Transporter	319.00	269.00
Turbo Lightning	190.00	130.00
Turbo Pascal, 8087, BDC	fr 125.00	fr 89.00
Turbo Prologue	call	call
TypeQuick	77.00	72.00
Word Perfect 4.1	685.00	519.00
Wordstar	575.00	290.00
Wordstar 2000+ rel. 2.0	795.00	440.00
Wordstar Professional	595.00	410.00
Software not listed: call for best price	call	call

Software from Arcom Pacific, Imagineering, SCA, Microsoft, Digital Research, Sourceware, Software Source, Intelligence, MicroPro, Ashton-Tate, Sorcim and others. All products carry full warranty. We support what we sell. All products are latest release versions.



SAM Computer Phone Answering	\$660.00
VoiceCommand	\$1490.00
Cipher 25MB tape	\$1890.00
NetComm 3+ 12 modem	\$249.00
NetComm Smart 123A	\$1090.00
NetComm Smart 1234	\$1350.00
NetComm Smart 2123	\$569.00
NetComm In/Modem	\$449.00
20 MB Drive Card	\$1890.00
Intel Above Board	\$579.00
Qubie 20MB hard disk	\$1050.00
Qubie 44MB hard disk	\$2600.00
Qubie 6 Pak 384KB	\$379.00
8087	\$259.00
Texan Super Vision IV	\$1050.00
Sigma Color 400	830.00
Texan Super Vision III	\$765.00
Qubie color monitor	\$699.00
Irwin 10MB tape internal	\$1150.00
Irwin 10MB tape external	\$1590.00
AST 6Pak with Sidekick	\$449.00
Microsoft Mouse	\$235.00
Tandon 20MB hard disk	\$1090.00
Toshiba P351 Printer	\$call
NEC P5 Pinwriter	\$1700.00
NEC P3 Color	\$1379.00
NEC P2 Color	\$1150.00
NEC P3 Pinwriter	\$1150.00
NEC ELF Spinwriter	\$699.00
Brother M1509	\$739.00
Epson LQ1000	\$1490.00

Prices correct at the time of printing, subject to change without notice. Delivery extra.

Training courses available on all products we supply at the Technology Learning Centre.

Call for specials and sales-tax exempted prices: (02) 212-6933, Order by phone, or send cheque or money order to: DISCWARE, 5th floor, 3 Smail Street, BROADWAY NSW 2007 TLX: AA23509. For all products not listed call (02) 212-6933. Viatel * 778 000#

\$1995
MADE IN USA 6 MONTH WARRANTY

AUSTRALIA'S BIGGEST
KAYPRO DEALER

DISCWARE

introduces non-obsolescence

THE KAYPRO PC

NEXT YEAR'S TECHNOLOGY

That's easy. Replace the existing IBM PC/XT board with an IBM PC AT-compatible board, available now; IBM 32-bit standard, available soon; or whatever the future holds.

MEMORY-HUNGRY SOFTWARE?

Simply exchange the existing multi-function board (256 KB of memory, expandable to 768 KB) for any configuration of memory, I/O, and controller boards.

HIGH-RESOLUTION GRAPHICS?

KAYPRO's standard multivideo board features perfect monochrome clarity plus high-resolution colour (IBM CGA). But, if it's IBM EGA that you want? — simply snap in a board.

FURTHER SYSTEM EXPANSION?

But of course! The KAYPRO PC is ready for anything. With six available slots, add what you need — networking, modems, more memory — the sky's the limit.

MONITOR

A large range of monochrome and colour monitors available.

FREE HANDS-ON TRAINING: \$220 VALUE!

Buy a KAYPRO daisy wheel printer with your KAYPRO PC for \$749.00 extra and Discware will enroll you, at no charge to you, in a full 8 hours' professional training course.

PLENTY OF STANDARD FEATURES?

POWER SUPPLY:

A generous 132 watts of power for even the most demanding hard drive.

FLOPPY DISK DRIVES:

Dual IBM-compatible floppy disk drives standard or slide in the drive of your choice.

HARD DRIVE EXPANSION:

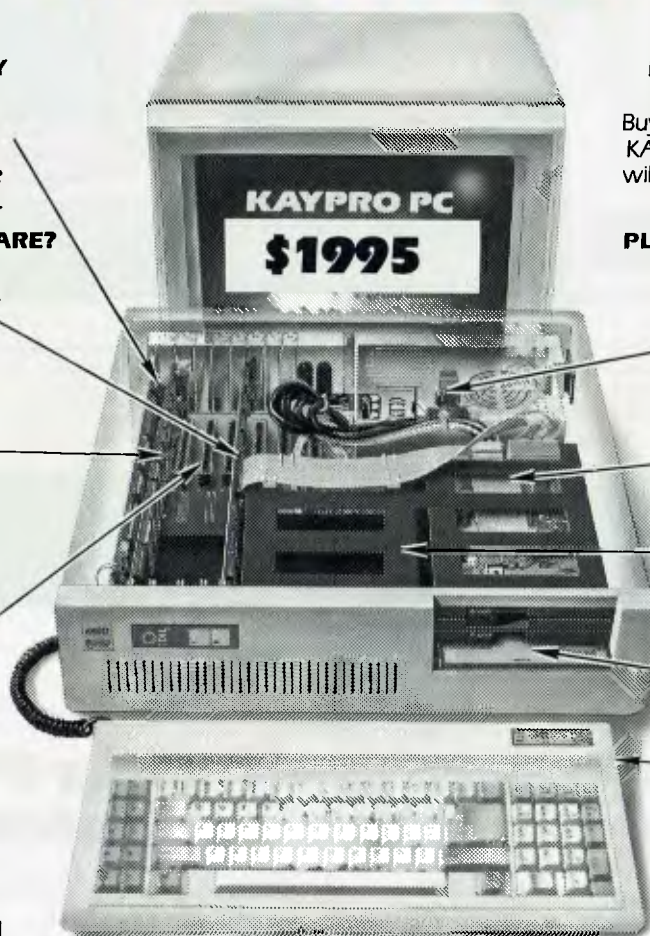
Space provided for easy additions of internal hard drives.

BUNDLED SOFTWARE:

A full selection of business software for today and tomorrow.

KEYBOARD:

Detachable, IBM PC AT-style keyboard with security keylock.



Kaypro's new "Snap-In" technology lets you exchange or update all vital system components in seconds.

Computer technology changes with lightning speed. In the time it takes to read this, there will be dozens of new products on the market that make their predecessors obsolete. With that in mind, we'd like to give you a bit of good news. The fully IBM PC/XT compatible KAYPRO PC has been designed to eliminate computer obsolescence. That means it's a snap to update all vital system components — right down to the system's microprocessor.

And, if it's topnotch features you want, look no further. The KAYPRO PC delivers: IBM PC AT-style keyboard, two disk drives, built-in colour capability, and a 256 KB RAM (expandable to 768). The culmination of Kaypro's 33 years of electronics engineering innovation, the American-made KAYPRO PC just may be the last computer you'll ever need.



Call for specials and sales-tax exempted prices: (02) 212-6933, Order by phone, or send cheque or money order to: DISCWARE, 5th floor, 3 Smail Street, BROADWAY NSW 2007
TLX: AA23509. For all products not listed call (02) 212-6933. Viatel * 778 000#



NCR's MiniTower gives your PC the power of a mini computer!

If you need more computing capacity, adding more PCs isn't necessarily the answer. Connect your current PC to NCR's MiniTower. Your PC becomes a terminal for a powerful mini computer system, with flexibility a networked PC system can't match.

MiniTower Power.

Because the MiniTower is like a mini computer, each terminal (or PC acting as a terminal) has incredible processing power. You can perform simultaneously as many tasks as there are terminals.

The Tower Range.

The MiniTower provides an entry level system for those businesses that require only 2-8 users and up to 140 MB of disc storage.

If your business requires even more processing power, then NCR has the answer. The Tower XP has all the advantages of the MiniTower, plus it can be configured for up to 16 users, and up to 4,500 MB of disc storage.

And NCR's Tower 32 can be configured for up to 32 users, and up to 4,500 MB of disc storage.

No matter what size your business is, there's an NCR Tower mini computer that's right for you!

MiniTower Flexibility.

Because NCR Towers use an industry standard operating system (UNIX System V), hundreds of vital off-the-shelf business applications are readily available. Integrated office automation, inventory and order processing, manufacturing – the applications are limitless!

So whether you're buying your first small business system, or you're thinking of upgrading your present one, go beyond the limitations of PCs! Make your PC part of your powerful new NCR MiniTower. Or Tower XP. Or Tower 32.

Get the name of your nearest NCR dealer today! In NSW and Queensland, call Tony Barkhazen on (02) 922 0161. In the other States, call Bruce Hall on (03) 328 0481.

If calling long distance, reverse the charges!
NCR. We're more than you think.

Search for excellence



Every now and then an innovative Australian-made PC product such as Hypertec's Hyperam board, FBN Software's Smartkey or NetComm's InModem arrives on the scene, blowing away the competition and often firing up a completely new market niche. Yet time and again industry commentators express surprise, not at the technology used nor the pricing level but the simple fact that they are Australian-made.

It seems the much-criticised Australian cultural cringe is still very much a force to be dealt with when taking on the challenge of the fickle local personal computing market. In fact I have heard more than one Australian manufacturer say that a prime cause influencing better-than-average market performance for several local products is the fact that buyers believe they are purchasing goods sourced from the US.

Well, we at PC Australia hope we are about to change all that by introducing an exciting new concept — the inaugural PC Australia Awards for Technical Excellence.

Over the next few months we will be inviting submissions from readers about Australian-made PC products (or services) which have impressed

them and which they believe show world-beating potential. The only conditions are that nominations are based on Australian-made PC-compatible products introduced into the market during 1986. There will be no single winner as such, but rather a collection of awards to the individuals responsible for developing the products.

The inaugural PC Australia Awards for Technical Excellence will be announced early in 1987, at a time and place to be decided. Readers can expect progress reports and a final analysis in subsequent issues. As with so many other features of PC Australia, the success of the awards ultimately depends on the level of support from you — the readers.

So start drafting your submission now. Perhaps there is a particular locally-made PC product which has really impressed you lately. If it is a software offering, it could be no more than a simple but indispensable utility or it could be a heavyweight integrated package. It may be a commercial chartbuster or perhaps only available through the public domain. The field is wide open, so there is no excuse for not sending me

your submission. And do not forget hardware products and their developers either. Australian products can be found in communications, expansion products, networking, CAD/CAM and automation so why not take up this challenge to re-evaluate the local PC industry? Keep in mind, however, that your nominations must relate to significant new developments introduced into the market during 1986, not products that have been around for several years and certainly not 'vaporware' products that exist only in the minds of would-be developers.

Our awards are dependent upon reader submissions (rather than ivory-tower decisions made by an esoteric panel of 'experts') because we intend to determine which products benefit real world users. So practicality is a prerequisite to be considered, along with technical expertise, and the effort that has been put into pricing, packaging and marketing the product. Your nominations should include a mention of how you have applied the product and how it has solved a particular business problem — after all, that is what PCs are supposed to be all about.

What's inside

As you can see from the cover, PC videotex is the theme of this month's magazine. Besides two main feature articles, a number of our regular departments — guest editorial, PC essay and the videotex page — focus on the same subject. This feature ties in with Videotex 86 — the Australian videotex industry's annual conference and exhibition — held this year on July 1-3 at the Sydney Hilton.

PC communications have been one of the fastest-growing areas in an otherwise troubled marketplace, fuelled by cheaper hardware more

sophisticated software and, perhaps more than any other factor, the widespread acceptance of videotex as a business communications medium. This issue aims to reflect some of the excitement generated by this industry within an industry.

Also we have an extensive review covering the multitude of Turbo Pascal add-on utilities now hitting the market. Turbo Pascal's phenomenal growth in popularity has led to it becoming not just a PC language but a way of life to over half a million PC users. So it comes as little surprise that many software companies (including Turbo's originator Borland International) are trying to pick up a piece of this action.

Tempting opportunities

The expanding videotex industry offers tempting, revenue-generating, opportunities to those who provide information and services. However, putting information on-line can be a costly exercise and for some operators the expected profits never materialise.

When considering introducing any new product one of the first exercises is to do some basic market research. You need to find out how many potential users there are, where they are and how they are likely to use your product. The research will help you tailor your proposed service to meet the real needs, not just the perceived needs, of your users.

A common mistake is to assume the service is valuable and that there is a ready made market for the information. It may well be valuable, but the real test is whether or not the user will pay money to use it.

We have obviously come a long way from the days when videotex was considered an electronic form of newspaper, used primarily for information retrieval. The mass market for electronic information retrieval has proved illusive. Users appear to have little desire for occasionally updated information and in any event are very price sensitive about such a service. Information providers now realise the value of building on the unique transactional capabilities of videotex.

Applications such as telebroking and teleshopping are successful because they make the best use of the technology and offer the major consumer benefits of new, faster, and more convenient ways of carrying out daily business transactions.

As a marketing tool, videotex offers service providers a way of linking information and services, and enables the user to respond immediately or, because it is a 24-hour a day service, at a more convenient time. It can therefore be used as a

sales presentation tool, a lead generator, and as an advertising medium where the user is encouraged to order a product, or ask for further information.

If immediate access to the latest information is important to your potential user then your chances of success are increased considerably. Investors, for example, who stand to win hundreds of dollars (or minimise losses), simply by having access to prices that change from minute to minute will consider the cost of accessing that information a worthwhile investment. Accessing on-line prices is also much easier than calling a broker every five minutes or setting up camp on the stock exchange floor.

Make sure your initial market research establishes a clearly defined need for the product. There is a tendency to interpret a positive reaction to a proposed service as proof that there is a market for it. A large percentage of prospective users may want your information or service but there is an enormous difference between wanting and needing.

When you have a product which provides timely and valuable information, the next step is to ensure that the information is of the highest standard. This requires a commitment to quality at all levels of your organisation. Do not make the mistake of trying to do too much, too soon. Expanding your service too quickly may place impossible demands on those responsible for maintaining the database. Users of videotex services tend to be unforgiving and if your information is not updated regularly, you will not be given a second chance.

Make sure your information is easily accessible by providing clear routing instructions, and always provide an escape route. Getting trapped in a frame or going down a never-ending tunnel of indices is

frustrating for regular users and totally confusing for those new to the technology. Even the best product in the world does not sell itself and you have to communicate your message. For a well defined market, direct mail can be an excellent and cost effective vehicle with the advantage that the message can be tailored to specific groups.

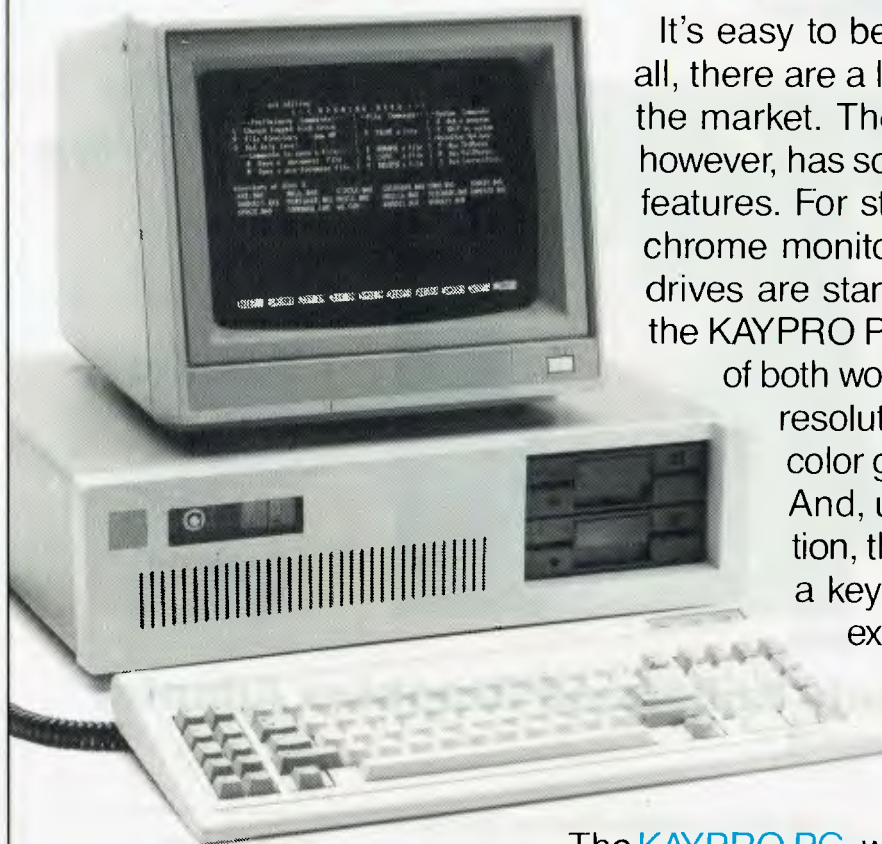
By keeping your product in the public eye advertising can play an important role in helping you achieve your marketing objectives but if you have not clearly defined your selling proposition you will be wasting your money.

Marketing of videotex services in this country is fairly fragmented and unless you are selling your service to known computer owners, you must face the problem of the customer needing to buy hardware before he is able to use your service. Videotex equipment is not expensive — a television adaptor can be purchased for as little as \$500 — but price is not the real issue. Some customers require help in choosing the right hardware. A customer service department should be able to provide most of this information but the suppliers of equipment must also realize the added value videotex services give to their product and put some effort into promoting the total package.

A final word. When you are enjoying the first taste of success do not become complacent. The importance of regular contact with users cannot be over estimated. Educate them, monitor their use of the service, ask them how they use the information, when they use it, why they use it and how they feel it could be improved.

Then be prepared to listen to their suggestions and recommendations. They know what they want and if you are unable or unwilling to provide it, it will be you rather than your user paying the price. ■

Don't Be Fooled By Expensive Imitations



It's easy to be confused. After all, there are a lot of *beige* PCs on the market. The **KAYPRO PC**, however, has some very distinctive features. For starters, a monochrome monitor and two disk drives are standard. In addition, the KAYPRO PC boasts the best of both worlds – perfect high-resolution text and built-in color graphics capability. And, unlike the competition, the KAYPRO PC has a keyboard just like the expensive IBM PC AT – security lock and all.

The **KAYPRO PC**, with its 8088 CPU and 256KB RAM (expandable to 768KB) delivers 100% IBM PC or PC XT compatibility. It's got nine slots for easy expandability and service. Plus, every KAYPRO PC buyer gets a generous collection of quality business software, including WordStar, absolutely free. Finally, the KAYPRO PC is easily distinguished from the others by the sticker on the box that says "Made in the U.S.A." See the KAYPRO PC difference at your Kaypro dealer. You'll know that **Kaypro Means Business** – and business computers.

PRICE: \$2195.*
\$2995
(20 meg)

KAYPRO®
CORPORATION

Trademarks: IBM, International Business Machines;
WordStar, MicroPro International

Prices shown do not include monitor

Innovators of Electronic Products for Over 33 Years

**includes: WordStar, MailMerge, CorrectStar, Star Index,
PolyWindows, MITE, GW-BASIC, MS-DOS and RAMdisk.**

For more information or the location
of your nearest dealer call

(02) 542 3866

*Suggested Retail Price

Orchid's TurboEGA™

The world's fastest EGA



Introducing the only Enhanced Graphics Adapter with PCturbo™ speed.

The experts agree: the EGA is the breathtaking new graphics standard, but the sophisticated software written for it places a big burden on the PC's processing speed. Beautiful graphics, crisp text, but too slow.

Everyone else rushed their EGAs to the market, but Orchid Technology took the time to do it right. Orchid's TurboEGA™, from the inventors of PC TurboProcessing, packs a high-speed Turbo and an EGA into one slot, for the world's fastest EGA.

Graphics with Speed

TurboEGA makes IBM PCs and XT's run faster than an AT. It brings dazzling speed to sluggish graphics programs. All types of software run faster, so you finish more quickly. Transparent to the user, you won't know it's there until you see its speed.

We are so confident that our TurboEGA is the ultimate graphics card that we decided to give away a free copy of Microsoft's Windows™ with each TurboEGA*. Even Microsoft recommends that you run Windows on an AT. Now Orchid's TurboEGA gives you AT speed so XT users can use this number one windowing software at the speed they demand.

The Complete Solution

Only Orchid puts this much performance into one slot and comes fully loaded with 256K of RAM, so there's no hidden cost. TurboEGA is the complete graphics solution.

Pick up the phone and find out how you can have the EGA the competition wishes they had: Orchid's TurboEGA, the world's fastest.

If you have an AT or a system with 80286 speed, ask about the Orchid EGA™—four graphic-card compatibility in one slot.

Features:

- Powered by 7.2MHz 80286
- Optional 5 or 8MHz 80287
- 256K of on-board RAM
- Four graphics modes: EGA, CGA, MDA, Hercules
- Supports the long list of EGA software:
Microsoft Windows & Word
Lotus 1-2-3 & Symphony
Topview
Framework
Chart-Master
AutoCAD
PC Paint Plus
and more...

Phone (008) 33 4854
For the name of your nearest Dealer.



Depth of feeling

Comments about PC Australia are always welcome, even critical ones, whether they arrive through Viatel (mailbox number 360241220) or by the normal mail.

More depth required

This is just a note to tell you that I enjoy your magazine and have sent in my questionnaire (from the June issue). How about more "in-depth" articles on DOS (ie at the Peter Norton level) and some 'User-to-User' contributions with more depth? I also enjoy Spreadsheet Clinic and would like to see a similar article on Turbo Pascal, if that is possible.

Peter Anderson
(Viatel 628818370)

It has been good to see the questionnaires rolling in. We are attempting to include more in-depth "hands-on" articles in PC Australia, as shown by the Sets feature in the last issue but the level of complexity in User-to-User and Spreadsheet Clinic is totally dependent on readers' submissions. As regards good old Turbo Pascal, I believe that PC Australia has given this product greater coverage than any other computer publication in Australia. While on this subject, why not take a look at the feature on Turbo Pascal utilities on page 40.

Too many pictures?

I find your magazine interesting and would love to continue to receive it. However, I would like to mention two points which I hope will help you improve it further.

First, my favorite sections are User-to-User and Tech Notebook, although I would prefer to see more BASIC programs. Second, the artwork on page 30 of the February 1986 issue is annoying! It means nothing and wastes

Having some fun

Your article in the April issue was very timely and true as I, too, have found much sadly lacking in V.2 of Lotus.

I have two computers and two Brother Twinriter printers and as you will see I like playing around with print styles.

NOW

to give you some idea of what I mean
I will try to display a few samples
although they will probably appear a little simple

There is no doubt that with patience

you can have a bit of fun if you can be
bothered
setting it up

I know it sounds nuts but if you have become
used to certain facilities it is a wrench when they are no
longer available to you.

Nor is it possible to give some fancy borders

as was possible under V.1.

I hope you have some success with your campaign.

P. A. Ingle
Daylesford, Vic



Knowledgeman/2 -the sequel

Many PC software developers have turned their own version of the ultimate powerhouse database with varying degrees of success. The latest contender for the heavyweight crown is a revamped revised release of Knowledgeman. Les Stein reports

Information is a commodity, and it is one that is in great demand. It is the lifeblood of the modern business, and it is the key to success. Knowledgeman/2 is a software package that is designed to help you manage your information. It is a powerful tool that can help you to organize your data, and it can help you to find the information that you need. Knowledgeman/2 is a software package that is designed to help you manage your information. It is a powerful tool that can help you to organize your data, and it can help you to find the information that you need. Knowledgeman/2 is a software package that is designed to help you manage your information. It is a powerful tool that can help you to organize your data, and it can help you to find the information that you need.

Artwork which a NSW reader says "means nothing and wastes space"

The definitive guide to business PCs on video.

Exclusive Video Offer



A NO-HYPE, NO-HOLDS-BARRED, COMPARISON OF THE BEST PCs ON THE MARKET IN AUSTRALIA

We test machines from Canon, Chendai, Compaq, Epson, IBM, Kaypro, NEC, Olivetti, President, Sanyo, Tava, and Video Technology.

To secure your video, available in VHS and Beta, complete the coupon below, enclose full payment of \$39.99, payable to **BRW**, and mail to:

Free Post 80A,
GPO Box 55A,
Melbourne, Vic., 3001

The **BRW**/TODAY'S tapes

Enclosed is full payment of \$39.99. By way of:
☐ Cheque/Money Order ☐ Bankcard ☐ American Express
☐ Diners Card ☐ Visa
 Card No.
☐ VHS ☐ Beta Exp. Date
 Name
 Address PLEASE PRINT
 Postcode Telephone
 Signature

All cheques payable to **BRW**
 Please provide us with a street number in preference to a post office box. Complete this coupon, enclose it with your payment in an envelope and mail it to Free Post 80A, GPO Box 55A Melbourne, Victoria Australia 3001.

MacRo-Video
PRODUCTIONS

space. Perhaps PC Magazine in the US can afford to do this but I don't feel that PC Australia can as yet. Your magazine is only 90 or so pages, and there should be more useful information. Many other sketches and photographs are repeated throughout the various pages of an article (such as the tree on pages 41, 42 and 44 of the same issue). It seems that you are trying to expand the size of the magazine by filling up pages with irrelevant material.

John Said
Sydney, NSW

We pride ourselves on our artwork, which we consider to be well above the standard offered by similar computer publications. This is the first complaint about it taking up too much space. Do other PC Australia readers feel this way?

Objective comments

First my thanks for a most informative publication; I eagerly await each issue.

I have tried for some time to obtain information regarding an MS-DOS file layout description. In particular, I wish to know the exact format of .OBJ (object) files, for the purposes of constructing a small compiler and making use of the LINK program.

I am able to find plenty of information on .EXE and .COM files, yet nothing appears to exist regarding the .OBJ type. If you are able to give a pointer in the right direction, I will be very grateful.

Gavin Eakins
Langwarrin, Vic.

Your request is timely because, starting in the next issue of PC Australia, will be a regular department dealing with the intricacies of DOS and other Microsoft products. The new column will be written by the technical support staff from Microsoft, who will endeavor to answer the trickiest DOS questions you can throw at them.



**NOW
COMES
WITH FREE
PRINTER CABLE!**

The world's best selling monochrome graphics card for the IBM PC.

There are more Hercules™ Graphics Cards in more IBM® PCs, XT's and AT's than any other monochrome graphics card in the world.

Over a quarter of a million demanding users around the world use a Hercules Graphics Card to improve the performance of their software.

The Lotus™ 1-2-3™ Booster.

Consider Lotus 1-2-3.

Hercules gives an off-the-shelf



copy of 1-2-3 the highest resolution possible on an IBM

PC, XT or AT. More 1-2-3 users choose the Hercules Graphics Card to get crisper text and sharper graphics than any other monochrome graphics card.

And we bring the same performance to other integrated programs like Symphony™, Framework™, and Open Access™.

But we don't stop with just the popular business programs.

The Hercules Graphics Card improves all kinds of software.

Like Microsoft® Word, a word processor that enables you to embed your manuscripts with scientific formulas.

Or Emu-Tek™, a program that allows your PC to emulate a graphics terminal and run mainframe graphics software.

Or our own Graph X™, a library of graphics subroutines that eases graphics programming.

Or AutoCAD™, a computer aided design program that offers features normally associated with expensive CAD systems.

And we supply free software with each card to do hi-res graphics using the PC's BASIC interpreter.



State-Of-The-Art Hardware.

The Hercules Graphics Card gives you graphics resolution of 720h x 348v and a parallel printer port. Our unique static RAM buffer pro-

vides sharp 9 x 14 characters and flicker-free scrolling. And our exclusive safety features help prevent damage to your monitor.



State-of-the-art custom IC technology delivers unsurpassed reliability. Ordinary

graphics cards use up to 30 ICs to do what one Hercules IC does. By using fewer parts, we reduce the possibility of component failure.

Which is one reason we warranty the Hercules Graphics Card for two years.

Unbeatable reliability. Advanced technology. Proven by over a quarter of a million users. Why settle for anything less than Hercules?

For more information call Tech Pacific, our distributor at **(03) 690 9055**

Hercules.
We're strong on graphics.

Recommended Retail Price \$849 (ex. tax)

When a good impression *really* counts...

MicroHelp introduces Fujitsu SP-320 letter-quality printer.

There isn't anything in the world like typewriter quality. The same quality we used to get from solicitors and accountants. You could feel the impression of the typewriter on expensive paper.

The Fujitsu SP-320 delivers this same quality on your computer. You can't get it from a souped up electronic photocopier, even if the fonts are fancier. Serious letter-writing requires a genuine letter-quality printer.

The Fujitsu SP-320 is ideally suited to the IBM PC— it emulates the Diablo 630 and speeds along at a real 48 characters per second using standard plastic or metallic printwheels.

What will really surprise you is how quiet it is for the speed— less than 60dBA. It has all the options like an automatic cut sheet feeder with full width (15") paper handling. And it doesn't cost an arm and a leg to run, like those photocopiers.

With its high duty cycle and optional serial interface, the SP-320 is also perfect for network or minicomputer applications.

Warranty is twelve months because Fujitsu build their printers to last.



If you must make a good impression, ring MicroHelp now.

MicroHelp

Fujitsu Printer Distributor

Brisbane
The Logical Solution
(07) 265 6108

**361 St. Georges Road
North Fitzroy, Vic. 3068
(03) 486 1555**

Sydney
PrinterOn
(02) 477 7288



News

Microbee goes for PC compatibility

Australian microcomputer pioneer Microbee Systems, which has enjoyed considerable success in the home and education markets, has endorsed the IBM PC standard for its first 16-bit business-oriented PC, the Microbee/Mitac Portable PC. As indicated by the title, Microbee Systems has joined the Taiwanese manufacturer, Mitac, in what the company claims is a "strategic marketing link".

The Portable PC is based on an 80C88 microprocessor and the popular Phoenix BIOS from Phoenix Software Associates (PSA), and incorporates two serial ports, a parallel port, game port, real-time clock/calendar, single 5¼-inch floppy disk with

an external floppy or 20M hard disk as options. The video driver is CGA compatible and onboard memory expansion is possible to 640K, all within a compact 340x420x70mm package, including an 81-key keyboard.

Future plans include a streaming tape drive, EGA adaptor, a mouse, LCD screen and nylon carry-bag. Weighing just 4.9kg and with a recommended retail price of \$1495 (plus the cost of a monitor), the Microbee/Mitac Portable PC looks set to register strong sales in the next few months, considering the large installed base of existing Microbee owners who may be thinking of moving up into the real world of PC standard computing.

Framework add-ons arrive

Ashton-Tate has announced the Decision Maker Series, a collection of three add-on programs for the integrated package Framework II. The programs, Decision Modelling, Financial Management and Project Analysis, were developed by Ashton-Tate's publishing group and will retail in Australia for \$110 each.

Decision Modelling is claimed to help managers organise, analyse and report on the information needed to make decisions, and incorporates a "decision matrix" display format showing all possible costs and benefits. The costs and benefits can be sorted in order of importance and rating scales can be defined in terms of words or numbers.

The Financial Management

module can produce a set of financial statements including income and expenses, balance sheets, cashflow forecasts, costs of goods sold and inventory depreciation.

The package can be used for continuous tracking of actual revenue and expenses against projections, and can be used to plan new business ventures. Project Analysis lets users define, organise and plan each step of a project and determine the personnel and materials required. Results can be produced in a variety of forms or combined to form a project proposal.

All three modules obviously require Framework II to be of any use, as well as DOS 2.0 or above and at least 512K of RAM.



Microbee: PC compatibility and strategic marketing links with Taiwan



TOP TEN

- | | |
|-------------------------|------------------------------|
| 1 1-2-3 | — Lotus Development Corp. |
| 2 Word | — Microsoft |
| 3 dBase III Plus | — Ashton-Tate |
| 4 Open Access | — Software Publishing Inter. |
| 5 Multiplan | — Microsoft |
| 6 Multimate | — Ashton-Tate |
| 7 WordStar | — Micropro |
| 8 Crosstalk XVI | — Microstuf |
| 9 Dataflex | — Data Access Corp. |
| 10 Symphony | — Lotus Development Corp. |

The PC Australia Top Ten is derived from monthly surveys of over 240 PC software outlets by Focus Research.

Storyboard released

After making use of the software for internal presentations and several recent product launches (including the PC JX), IBM Australia has officially released the PC Storyboard graphics program. PC Storyboard (reviewed in April's PC Australia) is designed to make screen-based graphics presentations quicker and easier.

The four modules within PC Storyboard (Picture Taker, Picture Maker, Story Editor and Story Teller) integrate to form a complete presentation system. Picture Taker will grab a "snapshot" of any standard PC-DOS screen; Picture Maker allows the user to create or edit screens; Story Editor allows the screens to be tied together in a particular sequence (including 10 different "dissolve" patterns) and Story Teller performs the presentation by stepping through the screen slide sequence. Output can be sent to a color or standard printer or to a large screen projector. PC Storyboard has a variety of possible applications in various industry sectors but costs \$492 for the three-disk set (PC or JX format).



Storyboard: a variety of possible applications in various sectors of industry

Beating Keating with PCs | New entry in AI?

O'Reilly Computer has a product for accountants for minimising the tax payable on company cars. It has the rather verbose title of Company Car Fringe Benefits Tax System. The new rules governing this tax are made more complex by the range of choices provided and in many cases it is not easy to determine which method results in the minimum taxation. The tax proposals have yet to get through Federal Parliament.

The O'Reilly system is claimed to be a specific purpose calculator which allows consideration of all variables at the same time, and

can cope with 'what if' questions with the ability to save and load tax-related data such as vehicle costs, salary, mileage, tax scales and rates. Once all the variables have been entered, the system will advise on the least-cost alternative, according to current guidelines.

This may be a flat 33.3 per cent deduction of annual vehicle costs, a flat 12 per cent deduction of the original purchase cost, or by an amount in proportion to the ratio of private and business use.

The package retails for \$195, which presumably includes tax.

Borland International claims to have entered the world of artificial intelligence (AI) with the introduction of the Turbo Prolog language development system. It will soon be available through Arcom Pacific at a price yet to be determined (although \$99.95 is the US price).

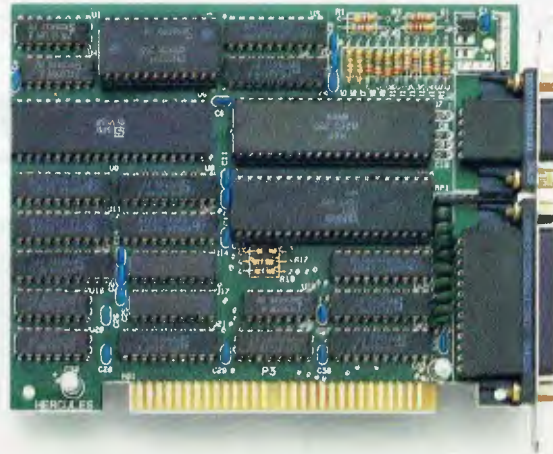
Turbo Prolog is said to run up to 10,000 times faster than existing Prolog implementations and it is hoped it will spur the development of powerful expert systems and customised knowledge bases.

The package includes an extensive reference manual and

tutorial, and GeoBase — a natural language geographical database complete with commented source code.

With Prolog, programmers need only describe facts, letting the PC determine the solution on its own. Taking the PC a step beyond its traditional computing functions (numerical calculations and data storage/retrieval), Prolog has the capability to infer or derive information from stated facts.

Designed in France by Alain Colmerauer in the early 1970s, Prolog derives its name from Programming in Logic.

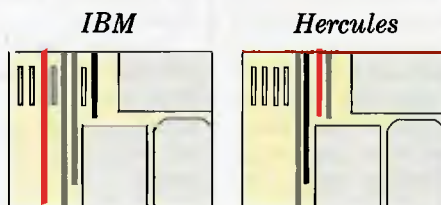


Why the Hercules Color Card is better for your XT than IBM's.

Did you know that there's a color graphics card specially designed for the XT™? It's called the Hercules™ Color Card. We think that it's better for your XT than the IBM® Color Graphics Adapter. Here's why.

The XT comes with an empty short slot. IBM's card is too long to fit in it, so you're forced to sacrifice a valuable long slot, while your XT's short slot goes unused.

The Hercules Color Card is designed to fit in this short slot. It's the smartest way to maximize the usable slots in an XT and provide for your future expansion needs.



Notice how much more efficiently Hercules makes use of the XT's slots.

Our efficient use of an XT's slots is not the only reason to buy a Hercules Color Card instead of IBM's. We give you a parallel printer port at no extra cost. (IBM charges extra and takes up another slot.)

A lot of people wonder how Hercules can do everything that IBM can in a card less than half the size. We do it by designing our own graphics microchips. Just one of our chips packs the punch of dozens of IBM's, reducing by more than 50% the number of components that can fail.

And we'll do just about anything to make our products the most reliable you can buy.



Of course, you *will* have to give up something when you buy a Hercules Color Card. You'll have to give up software incompatibility. With Hercules, there is none. Every program that runs on the IBM color card will run on the Hercules Color Card.

You'll have to give up IBM's ninety day warranty. Ours is two years.

Compare warranties	
IBM	3 months
Hercules	2 years

And you'll have to give up a dollar. The Hercules Color Card is \$386—IBM's is \$385.

Look into the Hercules Color Card for the XT, PC or AT™. Find out why the readers of *PC World* voted the Hercules Color Card 1985's best color graphics card—ahead of IBM's. For more information call our Distributor, Tech Pacific, (03) 690 9055

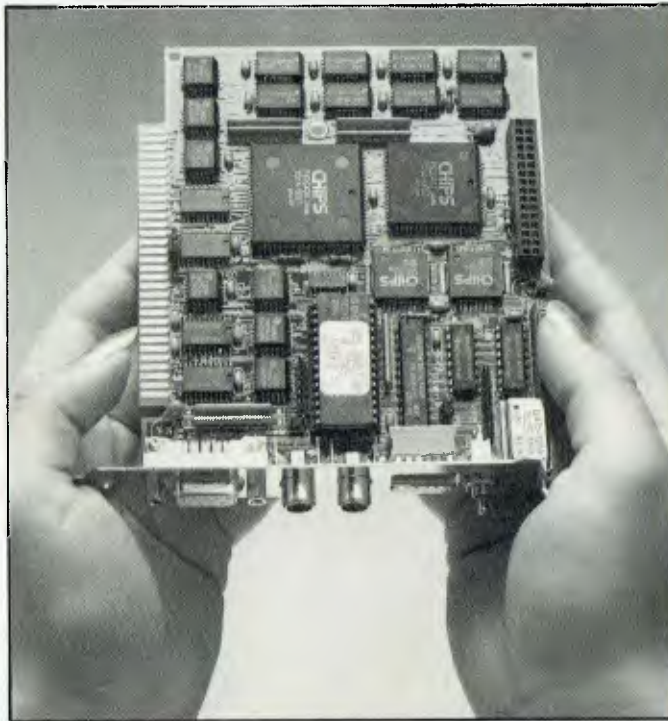
Hercules.
We're strong on graphics.

Versatile VEGA hits Australia

Dimension Graphics has announced the local availability of the powerful VEGA graphics adapter board from Video-7 of California. The half-sized PC expansion board uses VLSI technology to handle 10 graphics display modes and eight alpha-numeric modes, making it compatible with the Hercules card and the high-resolution (640 by 350 pixels) Enhanced Graphics Adapter (EGA) from IBM, regarded by many as the next standard in PC graphics.

Priced at \$1315 (including tax), the VEGA board should help accelerate the widespread acceptance of the EGA standard, now supported by a multitude of popular software products, including Microsoft Word, and Windows, Digital Research GEM, and Borland's Reflex.

As it only occupies a single "short slot" (with no overlapping of adjacent slots), installing the VEGA in place of another graphics adapter will allow more space for expansion inside the PC. The VEGA will drive existing monochrome or color graphics displays, but not at EGA resolution. For this an EGA (or compatible) monitor is required, but a variety of models have already appeared on the market, from companies such as Thompson, ADI and Roland as well as from IBM. As more EGA systems are sold, the price is sure to decrease.



The VEGA graphics adaptor board from Video 7

The secret of the VEGA board lies within the CMOS VLSI (very large scale integration) chip set used, which contains most of the controlling circuitry. This chip set was developed by the Chips and Technology (C&T) company in the US, which has also developed a complete AT compatible system on a set of nine chips. The surface-mount technology used in the VEGA board

also allows high speed and lower power consumption.

The RAM-based character generator within the VEGA allows up to four sets of 256 different characters or two sets of 512 different characters, and character cells can be any size up to 32 dots high and eight dots wide. The internal 256K dynamic RAM screen buffer supports up to eight graphics pages, and

allows flicker-free horizontal and vertical scrolling. The VEGA will also support horizontal "split-screen" applications compatible with the EGA standard.

The VEGA can be used when other display adapters are resident, and primary/secondary display selection and CGA/EGA modes can be selected with back panel switches, so that the PC cover need not be removed when monitors are changed. The rear of the VEGA also includes a bank of DIP switches, two RCA connectors (EGA) and the standard 9-pin video display connector, while on the board itself are a light pen connector and a 32-pin EGA "feature connector".

Software provided with VEGA board includes utilities to allocate display memory pages, emulate particular controller cards and to turn off the display after a predetermined period of inactivity.

Similar EGA compatible graphics boards using the same C&T chip set are being marketed in the US by established PC expansion board companies such as Quadram, but none of these have reached Australia, although we should not have to wait too much longer.

However, being first cab off the rank in Australia with an EGA compatible, Dimension Graphics stands to do well from the early sales of the VEGA board.

The big red tick

In an attempt to combat the flourishing "grey market" for PC software, Ashton-Tate's Australian subsidiary is introducing 'authorised product' stickers. All Ashton-Tate products distributed by authorised dealers, will have a large red tick superimposed on an Ashton-Tate logo and the inscription 'Authorised Australian Product'.

Bill Bolton, Ashton-Tate's general manager in Australia,

says the stickers are to "protect customers from the negative effects of local grey market sales". The grey market refers to the sale of products brought in through the 'back door' (imported directly) and marketed at a lower price than that of Ashton-Tate's authorised distribution and support network.

Bolton claims that although support costs are built into the local pricing structure, local

distributors do not receive any revenue to cover support of grey market products, and therefore purchasers of these undesirable goods are not eligible for local technical support and upgrades. Instead, according to Bolton, they should be supported from the US at the customer's expense.

Software buyers could previously only identify a grey market Ashton-Tate product by the US registration card, after the package had been opened. Now they can determine the product's status by the big red tick and of course the price tag.



Now everyone can afford a 24-pin printer...

MicroHelp and Fujitsu announce the DL2400.

You deserve a better printer.

The Fujitsu DL2400 delivers an exceptional print quality as well as a fast draft speed.

The DL2400's full width carriage allows up to 244 columns of text—ideal for those large spreadsheets. Its technical superiority and high reliability are winning plaudits from those PC users who need the best in dot matrix printing. The DL2400 is the quiet achiever averaging under 55dBA.

Just like the big 1200 line per minute printers Fujitsu also builds, the DL2400 supports a heavy workload with a high duty-cycle. The DL2400 is a real printer. Something of quality. Not a plastic cheap and nasty.

Every DL2400 user raves about how they can load both single-sheets in a bin and continuous stationery simultaneously without needing to remove and install tractors or feeders. Computer paper is rear sprocket fed so that extra sheet is not wasted when you want to tear off your printout. Changing ribbons over is a snap with a choice of re-usable cartridges with inexpensive refills.

Users marvel at the DL2400 LCD character display operator panel which allows them to select and configure all printer features with full prompting.

The DL2400 even has a colour option. Sure it emulates the

IBM graphics printer but the DL2400 command set also includes all the options for setting different type-styles and modes.

Take a look at one today.



You really do deserve a better printer.

MicroHelp

Fujitsu Printer Distributor

Brisbane

**The Logical Solution
(07) 265 6108**

**361 St. Georges Road
North Fitzroy, Vic. 3068
(03) 486 1555**

Sydney

**PrinterOn
(02) 477 7288**

From today buying a computer will be three times easier.

Three Entré Business
Centres open in Australia today.

So buying a personal
computer is suddenly a lot easier.

At your Entré Business



NOW OPEN

350 South Road, Moorabbin,
Vic. 3189

Telephone: (03) 555 6644.

Centre, you'll find the best
selection of quality personal
computers and software.

We'll also offer you our
professional back up, training



NOW OPEN

42-44 Hurtle Square, Adelaide,
S.A. 5000

Telephone: (08) 232 1222.

and consultations. Service that's
made Entré Computer Centres
Inc. the biggest publicly listed
computer retailer in the world.

Find out why. See us today.



NOW OPEN

83 York Street, Sydney,
N.S.W. 2000

Telephone: (02) 297731.

Good quality Mitac

Substantially similar in appearance to the IBM-PC, the Taiwanese produced MITAC MPC 160 has a high degree of compatibility and includes some interesting features.

Power-off observations

Packaging and presentation reflect the workmanship and attitude of manufacturer towards quality. The Mitac is conservatively and carefully packaged with ample protection for transport. The keyboard is packaged separately with a specially designed foam enclosure. Top marks for presentation.

The system unit has a clean, well finished metal cover and front panel. The review machine included two half height Matsushita floppy disk drives and room for a full height hard disk drive as well. Access to the internal logic is obtained by removing five rear screws. Inside there is ample space for air circulation. Of more importance is the complete absence of a "system" board. Most compatibles have a system (or "mother") board containing the circuitry for the CPU, communications, keyboard, ROM and memory. It also usually provides the expansion slots for IBM-compatible plug-in cards. In the case of the Mitac everything (except the power supply and disk drives) is on IBM-compatible plug-in cards, one of which is the CPU card. This card carries the usual 8088 microprocessor and the other facilities normally found on the system board. In addition there is an external reset switch and the standard DIP switches. There is room for an optional 8087 chip. No RAM is carried on the CPU card.

All the cards plug into a simple nine-slot back plane which in turn connects to the power supply. A separate keyboard connector protrudes from the backplane to the rear of the machine for easy connection to the keyboard's coiled cable. The construction of the system



Mitac: similar to the IBM PC with a high degree of compatibility

unit is simple and straightforward. The end result is a system extremely easy to maintain.

The concept of a simple backplane is certainly not new. It is a principle applied in many minicomputer designs and is also found in the DSE Multitech PC compatible, although that machine has limited expandability. If the Mitac develops a fault, the chances are it will be one of the plug-in cards. The diagnostics are usually capable of identifying which

card is the most likely candidate. Of course it could also be the power supply, a disk drive, or the keyboard, all of which are easily removable for exchange or servicing. If a distant user needs service the most likely modules could be shipped to Manly for investigation and repair. The average user equipped with a screwdriver and a little common sense should have no problem here. It is a neat solution to the hassles of working on large printed circuit boards. Four of the



nine slots are occupied. (three contain "long" boards), leaving three long slots and two short slots for expansion.

The remaining cards are the video controller, a "multifunction card" and a disk controller. The video card is either a monochrome text-only card, or a color graphics card — depending upon what you order. The evaluation unit had a color card. The multifunction card carries 256K of RAM, a game port, a serial port, a parallel port and a battery backed calendar clock. The floppy disk controller has an extension port for two more drives. You will need a separate controller card if adding a hard disk and additional memory will also need another card.

The color card provides the standard RGB output plus two composite signals, only one of which carries the color burst. On some monitors this signal can make the screen almost unreadable but dual provision is particularly useful if you have a composite monochrome monitor in addition to the color monitor. Some programs generate screens with no facilities for coping with monochrome monitors. This board gives you the option of avoiding the color burst signal by selecting the appropriate socket. The 250 watt power supply is adequate to meet the needs of a fully populated

backplane without requiring an unduly noisy fan to keep it cool.

The keyboard looks and feels like the KeyTronics improved version of the IBM keyboard (there is no logo to identify its source) and its plug is compatible with the IBM. Datamax supplies two different monitors for the MPC 160. There is the high resolution Phoenix IV (made by ADI) RGBI monitor. The other has a flat screen high resolution green display. I had no opportunity to test it, but it looks impressive in its specifications. An adjustable tilt/pan monitor stand completes the picture.

Documentation

The original Mitac documentation was not its strongest point. However the most recent release of its MS-DOS manual does the company credit. It is well printed, well written and a mine of useful information.

Software

Only one disk is supplied with the basic system; the MS-DOS 3.05 disk and associated utilities. You will really need to flesh this out with your own utilities and application software. Datamax supplies a BASIC package as a separate item tailored specifically to the Mitac ROM.

Power-on tests

The noise from the internal cooling fan is at about the same level as the IBM PC and is not obtrusive. The ROM does a variety of system checks before booting MS-DOS from disk. The settings of the internal DIP switches provide some interesting options for this phase, including the selection of more intensive but longer tests. Of more relevance is the machine's performance with software developed for the IBM PC. Here the machine shines. It ran the Microsoft Flight Simulator like a veteran Biggles. I tested WordStar 3.3, SideKick, Lotus 1-2-3, Open Access and Stylus and all worked well. My favorite prime number benchmark program performed at close to IBM PC speeds. Any differences are probably attributable to DOS 3.05 and the speed of the Matsushita drives.

I did like the way in which this DOS version grabs the date and time from the clock chip without the need for a specific utility to do the job. The MPC 160 is not cheap by current values, but it does offer a unique advantage with its combination of expandability and maintainability.

Marketing arrangements

Datamax has agents or branches in Sydney, Canberra, Melbourne, Brisbane and Perth where service is available on a 48 hour basis. In common with most PC suppliers, Datamax offers a maintenance agreement for 12 per cent of system cost.

There are no plans for local assembly. Datamax directs its sales to both the GEM market and to end users.

MITAC MPC 160

Australian Distributor

Datamax Pty Ltd
34-40 Central Ave
Manly NSW 2095

Basic Configuration

Processor	8088
Clock Speed:	4.77 MHz
Standard RAM:	256 K
Maximum RAM:	768 K
Ports:	1 Parallel, Centronics, 1 Serial RS-232C
Disk Drives:	2 half height Matsushita 13cm FDDs.
Operating System:	MS-DOS 2.11

Benchmark Speeds (IBM-PC = 10)

CPU-bound	10
Disk-bound	9.5

Ratings 0 (Poor) to 5 (Excellent)

Value for money:	3.8
Documentation:	3.5
Ease of use:	5
Appearance:	5
Reliability:	5
Availability:	5
Vendor Support:	5
Ease of Servicing:	5

Worst points: Little bundled software. Noisy drives.

Best points: High level of compatibility. Ease of maintenance. Overall hardware quality and attention to detail.

■ Stop your project running away with you ■



no matter what hat you wear

Everyone is a project manager.

Whether it's planning a sales campaign, planning to get organised or just planning to go on holiday.

Project management software previously required expensive and complex mainframes. Now, with SuperProject, it's available on your IBM Personal Computer (XT, AT or close compatible).

SuperProject is colourful, easy-to-learn, and is a very effective management tool . . . for any manager in every business.

SuperProject incorporates detailed charts, customised calendars and screens, all with sharp bright colours. Easy-to-understand symbols clearly show the activities which are critical and the ones you can safely slip.

SuperProject helps you control your time, your money and your resources. SuperProject naturally integrates with SuperCalc³, and why not? They're both from Sorcim/IUS, famous for its micro computer software.

To learn more about SuperProject, fill in the coupon below and we'll let you in on the mysteries of PERT Charts, GANTT Charts, milestones and nine-day fortnights.

Or call your local computer dealer to arrange a demonstration.

arcompacific
■ master distributor ■

SuperProject is available for the IBM PC, XT, AT or close compatible, running DOS 2.0, 2.1 or 3.0. Minimum requirement is two floppy disks. 256K memory will typically solve 200 tasks, 640K will typically handle 1600 tasks.

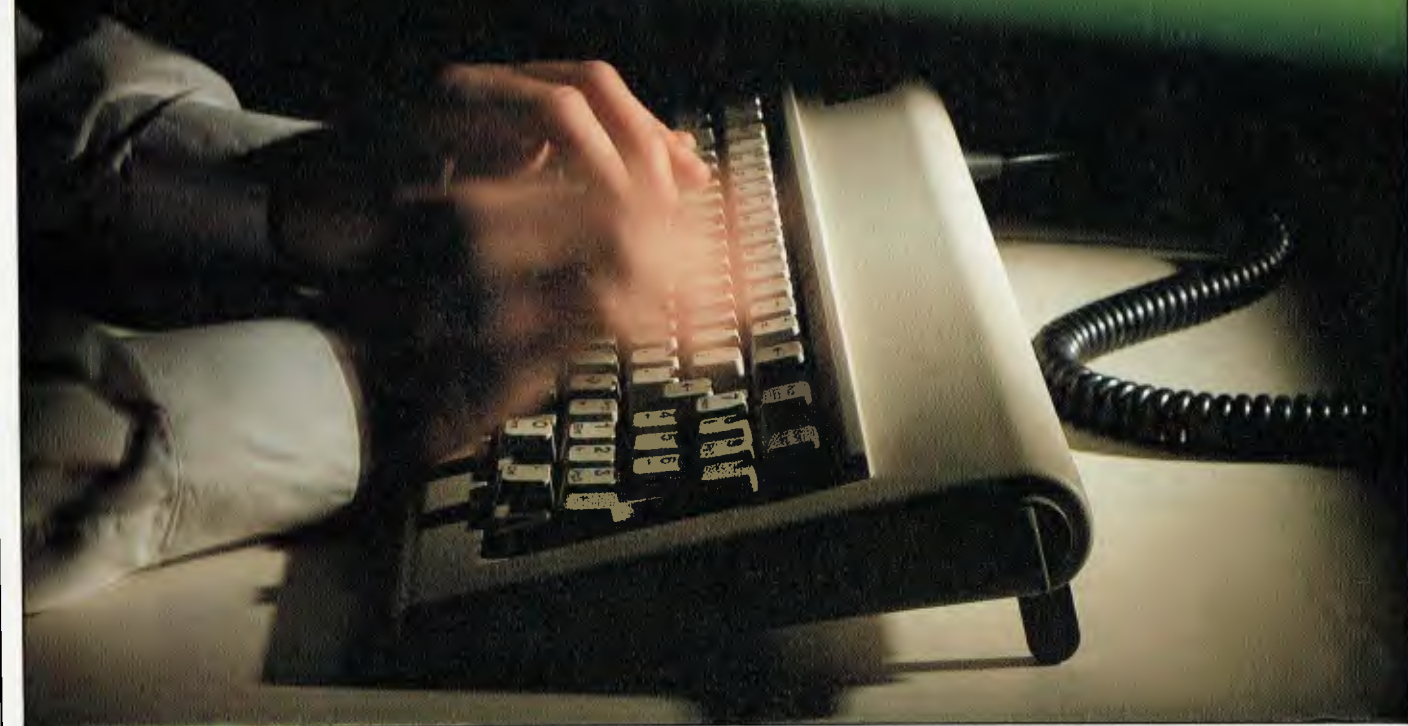
Please send me details about SuperProject. Name

Address

Post to: FREEPOST 2, **ARCOM PACIFIC**, P.O. Box 13, Clayfield, Q. 4011

A giant step

Vtex Interlink PC-Editor Gateway NetComm



If ever a prize was to be awarded for the field the furthest behind the state of the art in PC programming, it would have to go to PC videotex software. Users who have been pampered by the slickness and grace of modern packages complete with pop-up screens, pull-down menus and natural language interfaces are forced to take a giant leap backwards when confronted with the current range of videotex software.

Admittedly the Prestel standard is a product of early 1970s technology, and the PC does tend to have difficulty in displaying all eight Prestel colors in full graphics resolution, but this is no reason for the software to be equally primitive. Instead, videotex software should attempt to make up for these hardware deficiencies, which are quite likely to remain with us for some time to come. The role of the software should be to ease the pain of the hardware and make its utilisation easier and faster, with a minimum of fuss.

Furthermore, PC videotex software should not merely attempt to emulate 'dumb' Prestel terminals, but should instead take advantage of all the 'smart' features offered by PCs. After all, the PC is not merely a unidirectional terminal, but an intelligent business tool which can be customised to the work patterns of its owner. Although the videotex accessing habits of most business users become fairly routine, very few available videotex software packages allow users to adequately customise and automate this routine.

For example, if a typical user dialled up Viatel first thing every morning, collected his electronic mail, scanned the latest figures for BHP share prices, transported this

information to a dBase III file, then logged off again, this procedure should in theory become totally automated. Yet no existing program can handle all of this by itself. It is indeed possible to accomplish (and I am sure that many have worked hard to achieve it), but always through a series of complicated patches, program swaps and batch files.

To take another example, if the same user had received 20 electronic messages, all of which required prompt answers, he would have to dig up the complex 10-digit code assigned to each Viatel user and jump to page *1010# 20 times to send possibly identical messages to each individual. What about calling up a pop-up list of all contact names, highlighting the appropriate one and shooting off a standard reply automatically? Again, this apparently simple task is beyond the capabilities of products available on the market.

Furthermore, what is the point of videotex information providers trying to make use of the (limited) features of Prestel such as double height, blinking and concealed characters, when a large number of available PC videotex packages cannot support these? What is the use of color-coding numerical data such as share prices, when the majority of business PC videotex users are tapping into the service with software that dilutes this information into monochrome or ghastly shades of pink and blue? Obviously the deficiencies of current PC videotex software should be a major concern to business information providers as well as the unfortunate users.

I have often thought that it might even prove worthwhile for the major providers to band together and

develop a stunning, state of the art, all-singing, all-dancing software gem that does the job properly, and then give it away free to anyone who wants it. I can guarantee it will increase the usage of their services, but unfortunately the business world does not seem to work like that. Public domain software and big business do not often go hand in hand.

An oft-quoted advantage of accessing videotex through PCs is claimed to be 'telesoftware', whereby program and data files are transformed into videotex frame format and transmitted in the normal manner. The receiving PC then decodes the specific frames back into a readable or executable file. Although this would appear to be a rather clumsy and slow method of communicating software when compared to existing PC bulletin board systems, it does indeed have potential. However, few PC videotex packages support telesoftware and even fewer service providers offer it. Most of the software available from Viatel, for example, is aimed at Commodore 64s, BBCs, Ataris and similar home micros, and there is very little in the way of useful or businesslike IBM PC software. Furthermore, the available programs are fairly trivial when compared to some of the better public domain offerings from alternative sources such as PC user groups. Finally, to add insult to injury, most telesoftware is charged for by the frame!

Obviously we have a long way to go to fully exploit the marriage of personal computers and videotex services and like all marriages, each partner has a certain amount of adjusting to do. No matter where the final blame is laid, an unavoidable

Ian Robinson looks at PC videotex software to see if the primitive programming of the 1970s has caught up with state of the art PCs



conclusion is that it is the role of PC videotex software to try to smooth out the bumps.

Having said all that, I will now proceed to the heart of this article — a review of several notable PC videotex packages which have come to my attention over the past few months, and which at least try to address some of the problem areas described. But, let me make the point in advance that this industry is undergoing rapid changes due to the popularity of videotex and there are continual updates and revisions appearing for just about all of the products reviewed.

NetComm PC videotex

When NetComm released its breakthrough In/Modem, one of the most appealing features (besides being Australia's first internal PC modem) was that a simple videotex program was included with the hardware, allowing instant productive use of the device once it was installed. Subsequent modem releases have included revisions of the videotex program and its major attraction is still that it comes free with the hardware.

The more recent releases of the NetComm program have the distinct advantage of including general purpose PC communications capability, so that all communicating can be done through the one program.

(As an aside, I have noted each successive version of the software appears to bring it one step closer to Crosstalk XVI, by now almost a PC communications standard in itself. I am just waiting for the programmers at NetComm to add a boot-up random phrase generator, to complete the cloning process.)

My first six months of accessing videotex was via the NetComm program, and one can definitely get used to it in the long term. However, once I began to explore other videotex packages I realized that there were distinct disadvantages in the way that the program downgraded the eight Prestel colors into shades of pink, blue and white. More recently, support has been provided for more powerful graphics adapters (including the EGA board) but the basic CGA display remains the same. Still, it costs no extra, and I suppose you should not look a gift horse in the mouth.

Although the Prestel data comes through the PC serial port at a reasonably rapid 1200 baud, the NetComm program takes about 10 seconds to display each frame on the screen. A frame capture facility is available and a series of captured frames can easily be scanned off-line in 'slide show' fashion, so the smart user can quickly log on to a service, grab the necessary frames and log off to study them at leisure. Parameters for each videotex service need only be programmed once, and afterwards just about everything is automatic — which makes sense for a package which has been bundled with an auto-everything Hayes-compatible modem.

Vtex 2 and 3

Vtex is one of the original PC videotex decoding packages and has gone through several revisions and upgrades since its release in 1984. The versions available are Vtex2 for color/graphics systems and the top of the range Vtex3 editing package for information providers who need to create frames and upload these to the mainframe service.

Because of its unusual display method, in which the cursor seems to

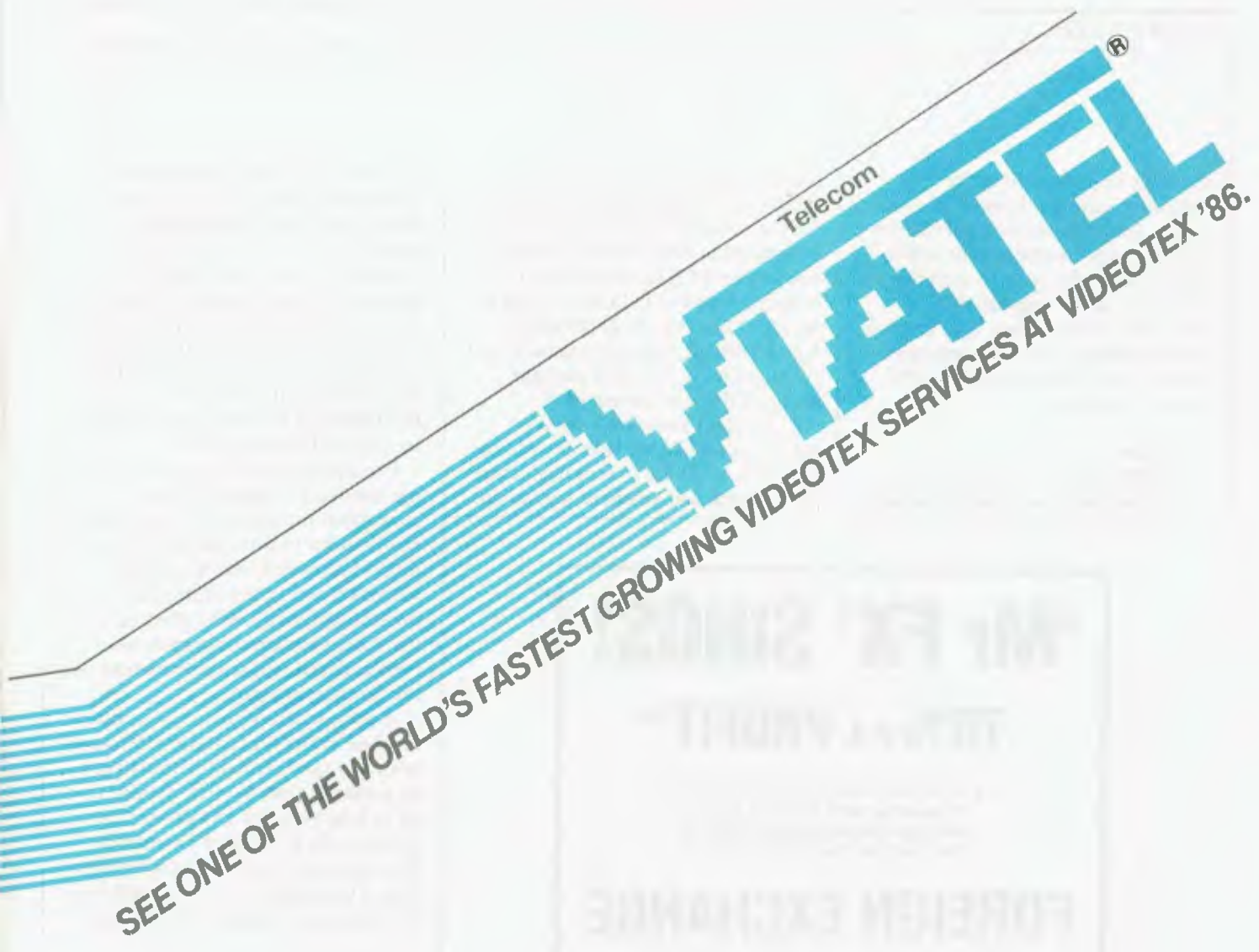
perform two complete passes of the screen, the Vtex display updating took the longest time out of all the products, ranging from nine to 11 seconds each time. This soon forced me to adopt the habit of memorizing a lot more page numbers for direct jumps, rather than flitting through a series of menus. Vtex may be toggled through two modes — color without graphics or graphics without color, so that between the two of them you get a fair idea of what the frame is supposed to look like.

Vtex3 has an excellent frame transmission feature for service providers and I used it to transport the PC Australia BBS to Viatel. I dialled up my host system XT (running PC-Display) from another PC running Vtex, captured the necessary frames in the required order, modified these appropriately and then transmitted them to Viatel. It may seem like a great deal of messing around, but it worked! The only annoyance is waiting for each 2K (approx) frame to be transmitted to Viatel at the snail's pace of 75 baud.

Interlink

Of all the products examined, the Interlink program was certainly the fastest in terms of screen display, averaging just over seven seconds to complete any particular frame, regardless of the amount of graphics. Interlink provides basically the same features as the videotex portion of the NetComm program, including frame capture and the ability to jump offline and back into Prestel. However, the actual CGA screen display generated by Interlink is a little more pleasing to the eye and implements the red-cyan-white PC color palette instead of the magenta-cyan-white as used by NetComm and most other systems.

A modified version of the software is available to support full graphics on the Hercules board. Interlink Electronics, the developer of the package, plans to have a full-color version available soon for the STB range of color graphics boards. However, the dialling and videotex service parameters are not as



The service is Telecom Viatel. And in just over 12 months, it's attracted more than 150 service providers and over 15,000 subscribers. Which isn't surprising, considering that Viatel offers three distinct levels of service.

Public access, private systems and interactive processing. But don't just take our word for it. Come to the Sydney Cove Room at Videotex '86 and see what's made Telecom Viatel a winner.



Telecom Australia
Better for Business

GIANT STEP

smoothly implemented as the NetComm solution. Instead of a menu system, Interlink requires parameters such as phone numbers to be either entered manually or to be included as extensions to the original DOS command. Nevertheless, Interlink is a smooth package with few detectable hiccups, providing one possible PC videotex solution.

PC-Editor

The PC-Editor package happens to be the one that I use most of the time,

simply because it will support full Prestel color and graphics on my PC. This is because it has a large collection of installable device drivers, including one for my STB Graphix Plus II board. I bought PC-Editor as part of the PC Australia videotex bulletin board package, which I originally had running on my XT. This package included the host system itself (PC-Display) and a bulk update facility as well as the videotex editing software. I still use the editing feature to send new and amended frames up

to Viatel, where the bulletin board now resides. (My XT with a single phone line could not handle the traffic.)

Once you use a full-color, full-graphics videotex package it makes it hard to go back, but be warned, this luxury comes at a price. In addition to whatever you pay for the souped-up graphics card, the complete PC-Display/PC-Editor package will set you back around \$1500.

Perhaps because the program does not have to go through all the conversion routines switching eight colors down to four, the screen update rate is fairly brisk, at about eight seconds. Even frame editing can be done fairly quickly after practice, as the Prestel editing commands have been assigned in a sensible manner to the function key pad.

A comprehensive help screen can be invoked at any time, and a command summary card is provided which can be mounted close by. The details of up to four videotex services can be stored in the PC-Editor parameters file, along with system configuration data. The product was developed by a US company, Videotex Systems Inc.

Gateway

A relatively new entrant in the PC videotex software stakes is Gateway (see Tony Ward's article, page 53). The outstanding feature of Gateway is its cockpit-like primary display mode, which shows a wealth of system status information around the edges of the videotex frame images, such as character counts (both transmitted and received), function key descriptions, capture filename, system time and online mode. The other two display modes available are a full-color display with limited graphics and a full-graphics display in monochrome blue (simply a larger version of that appearing in the primary display mode). The current frame can be toggled through these three modes by hitting the F7 function key.

Gateway's sensible menu structure is also much closer to what we have

'Mr FX' SINGS!

78% P.A. PROFIT*

& NOW RELEASED IN SYMPHONY.

*Based on 'Mr FX' 9-Day Moving Average Graphics for A\$/DMK for the month ended Friday, May 16.

FOREIGN EXCHANGE

MANAGEMENT MADE EASY



USE 'Mr FX' GRAPHICS ON YOUR IBM OR COMPATIBLE P.C. IN COMBINATION WITH LOTUS 123 OR SYMPHONY.

'Mr FX' is a new P.C. program that provides 5 & 9 day moving averages for 5 currencies against spot A\$ & US\$ in graphic format instantaneously. Manage your FX loan or trade exposure like an expert. Only \$149 Full Cost. No previous P.C. experience necessary.

- ☐ Please send me details of 'Mr FX'.
☐ Please send me 'Mr FX' & Bill Me.
☐ Please send me 'Mr FX', Cheque Enclosed.
☐ Lotus 123 or ☐ SYMPHONY

Name

Company

Address

Postcode

Send to: Specialised P.C. Systems Pty Ltd.
P.O. Box 241, Cremorne 2090,
or phone (02) 90 1039

NJ40987

Forging the Link

between micro and mini

Consider how much more productive the PC's in your company could be if they were linked directly to your IBM™ Mini-Computer. All that power, all that information, available to everyone who needs it.

The range of data communications products from AST Research lets you do just that. Whether you want to link just one, a few, or a whole network of IBM™/compatible PC's to your IBM™

System 34/36/38, AST has simple-to-use, cost-effective solutions.

Solutions like 5251/11 Plus™, which provides direct coax connection of PC to IBM™ System 34/36/38, offering multiple host sessions and up to 7 combinations of displays and printers concurrently.

If your PC's could use the power of your IBM™ Mini-Computer, let AST Research forge the link.

Data Communications products from

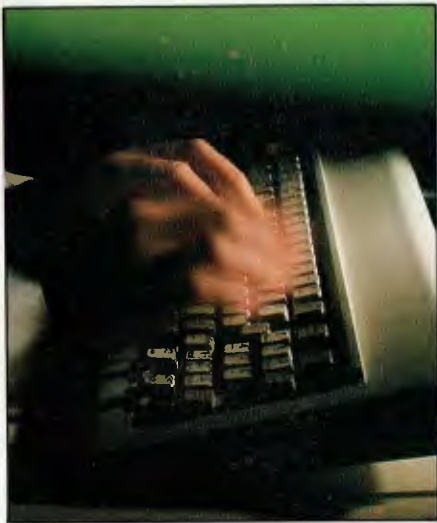
AST
RESEARCH INC.

IBM is a trademark of International Business Machines.
5251/11 Plus is a trademark of AST Research.



IMAGINEERING™

77 Dunning Avenue, Rosebery, N.S.W. 2018.
Telephone: (02) 663 0541
86 Wairau Road, Takapuna, N.Z.
Telephone: (09) 444 5088.



come to expect from modern 'friendly' PC software, and is almost entirely based around the function key pad. Options include the ability to set up a capture file, receive telesoftware, translate a videotex file to pure ASCII format and run external programs. A

number of convenient DOS functions are also supported from within Gateway, including renaming, deleting and copying files, changing of disks and directories and printing text files. Videotex service parameters can be organised into a simple menu, as can frequently-used external programs, allowing easy program selection and mode switching.

Gateway is in many ways the best locally-developed PC videotex program, although the manual could do with some cosmetic improvements. Technically however, everything you need to know is in there, and the on-line help will solve most problems. Gateway was among the fastest programs examined, averaging about 7.5 seconds to update frames, in any of the three modes.

The bottom line

Just as there is a wide variety of business PC users, there is also a wide variety of videotex users, and the

selection of an appropriate PC videotex package requires the user to define his or her frame accessing patterns and frequencies, and the relative importance of the information obtained.

First of all, if you are involved in a business where you need to be logged into a videotex service continually (ie six hours a day or more), your best bet is to buy a standalone videotex terminal, perhaps with a color printer and editing keyboard if necessary. Using a PC to perform this task is impractical and wasteful of its capabilities. If, however, you will be using the PC for other occasional tasks and money is no object, then PC-Editor is probably the way to go, particularly if you are creating frames for uploading to the videotex service. In this situation, make sure you have a graphic adapter that can handle the complete Prestel color and graphics set.

On the other hand, if you have

THE COMPUTER PAPER SPECIALISTS

For QUALITY Computer Paper in Cartons or Micro Packs

Word Processing Paper. 279mm x 241mm — 70gsm Bond with Micro Perforations. Now available in BLUE, PINK or YELLOW Bond Paper.

Also 2 Part & 3 Part White Carbonless Computer Paper.

True A4 Word Processing Paper. 297mm x 241mm — 70gsm Bond with Micro Perforations.

Listing Paper. 279mm x 381mm — 60gsm Bond. Available in Blue Half Shadow, Finline or Plain.

Also 2 Part, 3 Part & 4 Part BHS or F/line Carbonless Listing Paper.

Also available:

COMPUTER ADDRESS LABELS
COMPUTER PRINT-OUT BINDERS
CUSTOM PRINTED COMPUTER FORMS

96B HERALD STREET, CHELTENHAM, VIC. 3192 — PHONE: (03) 584 5488

Visualizing Power



Graphics products from AST Research harness the power of your PC to provide graphics of unequalled quality. Whether you need high resolution monochrome or full spectrum colour, AST offers a full range of solutions.

Solutions like AST-3G™ combining IBM™ EGA, IBM™ CGA, and monochrome graphics capabilities on a single adapter.

Preview!™ brings high resolution,

bit mapped graphics and sharp text to the monochrome screen.

ColorGraphPlus™ provides full spectrum colour graphics and IBM™ CGA compatibility. Both Preview!™ and ColorGraphPlus™ come with Microsoft™ Flight Simulator, SuperPak™, and a parallel port.

So if you're ready for graphics, let AST Research visualize the full power of your PC.

Graphics products from

AST
RESEARCH INC.

IBM is a trademark of International Business Machines. Preview!, ColorGraphPlus, and SuperPak are trademarks of AST Research. Microsoft is a trademark of Microsoft.



IMAGINEERING™

77 Dunning Avenue, Rosebery, N.S.W. 2018.

Telephone: (02) 663 0541

86 Wairau Road, Takapuna, N.Z.

Telephone: (09) 444 5088.

GIANT STEP



access to a videotex (1200/75) modem but simply like to look around at the various services now and again, it would be foolish to spend hundreds of dollars on a product. Limited color and graphics present no great handicap in this case, so pick up one

of the cheaper packages, or wait around until a decent public domain package turns up — it is bound to happen sooner or later.

For that large (and growing) group of PC videotex users who fit in between these two categories, it really boils down to a matter of personal choice, keeping in mind what your eyes, wallet and PC can stand. My vote at the moment has to rest with Gateway for plain vanilla CGA systems and PC-Editor for enhanced graphics editing stations, but the way things are going this could quite likely change in the future as further releases are made. As I said at the start of my review, this is one area of PC programming where the state of the art can certainly be pushed a long way further. ■

Vtex2	\$199
Vtex3	\$590
Neologue Pty Ltd	
30 Ida Grove	

Olinda Vic 3788
(03) 751 2066

NetComm PC Videotex
NetComm Pty Ltd
Unit B, 25 Paul Street North
North Ryde NSW 2113
(02) 888 5533

Interlink	\$120
Interlink Electronics	
171 Dorcas Street	
South Melbourne Vic 3205	
(03) 699 4177	

PC-Editor	\$995
Syscorp Pty Ltd	
41 Military Road	
Neutral Bay NSW 2089	
(02) 908 1599	

Gateway	\$199
PC Extras	
P.O. Box K9	
Haymarket NSW 2001	
(02) 319 2155	

NO-FUSS COMMUNICATION FOR THE PC

INTRODUCTION

With this EASY TO INSTALL package the user can access almost all TEXT and VIDEOTEX based databases.

for instance, you can:

- Capture messages or files from OTC's MINERVA or TELECOM's AUPAC at 1200bps direct to disc.
- Download programs from VIATEL using the TELESOFTWARE facility at 1200bps direct to disc.
- Communicate at 300bps with bulletin board services.

COMPUTERS SUPPORTED

A selection of computers supported includes:

TANDY	:	Model 1000
NEC	:	APC III
T.I.	:	PROFESSIONAL
OLIVETTI	:	M24/21
SANYO	:	775
PRESIDENT	:	16

The package contains:

MULTI-FUNCTION COMMUNICATION SOFTWARE
DATASAT's V1275 MODEM
PREMIUM AUTO RE-DIAL TELEPHONE.

The V1275 modem is available separately.

DATA SAT MODEMS — *the intelligent connection*
Phone: (02) 525 6688

Creating New Power



The time has come. Your proficiency has surpassed the power of your PC. If your productivity is going to continue its upward path, you need more RAM.

More RAM = more computing power – but it has to be **usable** RAM.

The range of RAM products from AST Research don't just create new power for your PC, they create usable power. Today's most popular business software, such as Lotus 123[™], Symphony[™], and dBASE III PLUS[™], can all run much larger

applications on PC's given AST solutions.

Solutions like SixPakPremium[™], with up to 2MB memory, 1 serial port, 1 parallel port, clock/calendar, Super Pak[™], utility software, DESQview[™] multitasking/windowing software and SideKick[™] desktop management software. And RAMpage![™] – up to 2MB expanded memory, Super Pak[™], DESQview[™].

So if you're ready for more RAM, make sure it's usable RAM – created by AST Research.

RAM products from

AST
RESEARCH INC.

Lotus 123 and Symphony are trademarks of Lotus Development Corporation.
dBASE III Plus is a trademark of Ashton-Tate. SixPakPremium, Super Pak, DESQview,
SideKick and RAMpage! are trademarks of AST Research.


IMAGINEERING[™]

77 Dunning Avenue, Rosebery, N.S.W. 2018.
Telephone: (02) 663 0541
86 Wairau Road, Takapuna, N.Z.
Telephone: (09) 444 5088.

POWER FOR WITH TELECOM COMMUNICATION



NETCOMM MODEMS

Externals

1200 Full Duplex	\$688
2400/1200	\$964
123A	\$1170
1234A	\$1376
3 plus 12	\$227

Internals

In Modem	\$454
1200	\$654
2400	\$880
123	\$840
1234	\$1180

**EGA Card &
EGA Monitor**
\$1880

JULY
PRODUCT HIGHLIGHTS

R YOUR PC COMPUTING ONS PRODUCTS!

COMMUNICATIONS PRODUCTS

CXI S251/11 & 12	Monthly Special
Tango Lynk	"
Tango Gate	"
CXI 3278 (Irma Compatible)	\$1160
X25 for IBM/PC	\$1500
CXI 3270 PC	Monthly Special

NETWORKING

Orchid PC Net Card	\$780
Starter Kit (PC Net)	\$1590
3 Com	Monthly Special

Orchid Turbo

Board 186 with 640K **\$1375**

IBM Storyboard **\$695**

MORROW PIVOT PC

Portable, 640K, Readable Screen,
2 x 5¼ Floppy Disk,
Graphics, 12lbs **\$4900**

IBM/XT

640K, EGA Screen
Qubie 20MB, Cipher Tape
Backup, 2 Floppy Disks **\$8425**

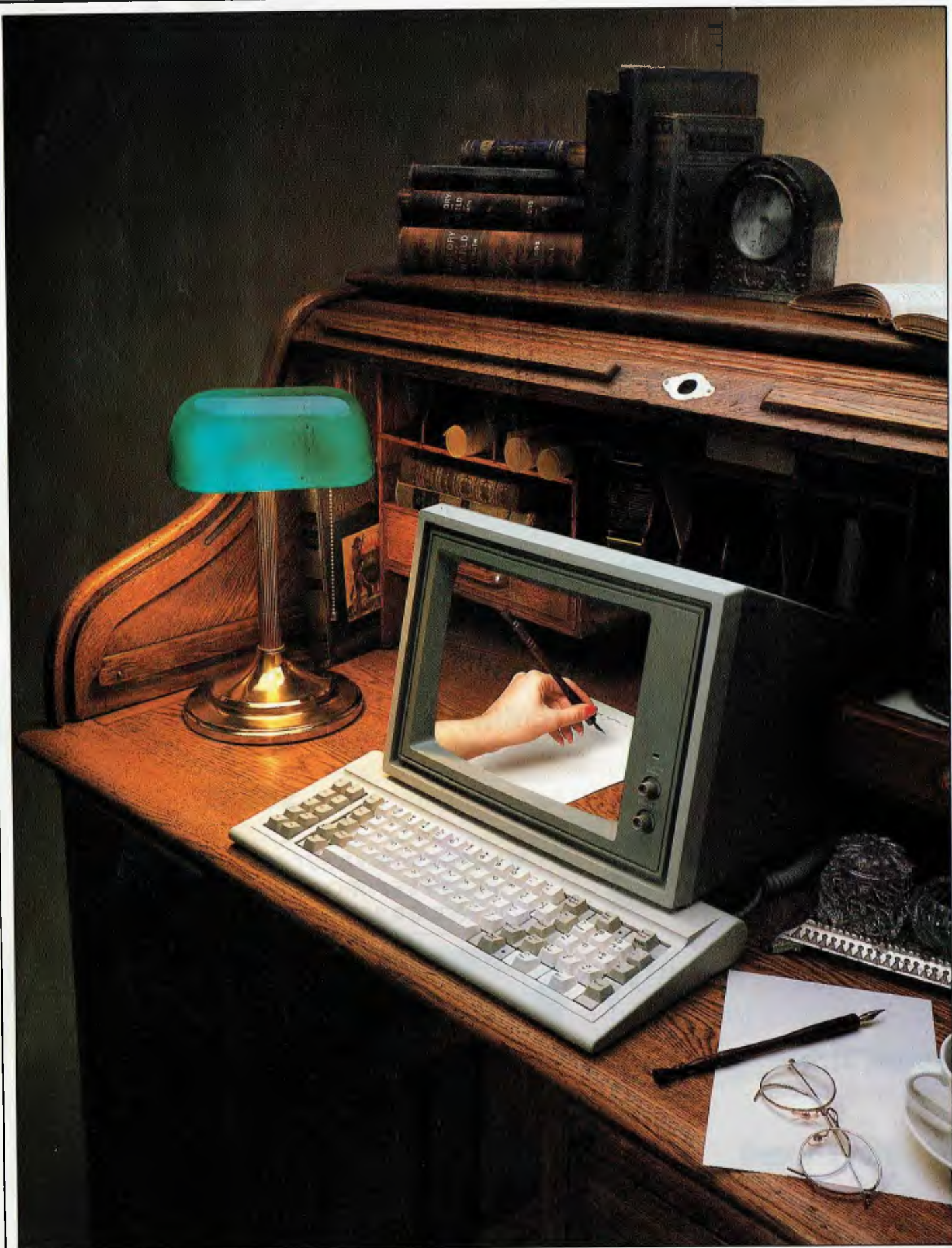
**ENQUIRE NOW ABOUT OUR
MULTIPLE PURCHASE
REBATE SCHEME**



SYDNEY Telecomputing, 2nd Floor, 156 Pacific Hwy,
St Leonards, NSW 2065 Tel: (02) 439 5966

MELBOURNE Telecomputing, Ground Floor, 582 St Kilda Rd,
Melbourne, Vic 3000 Tel: (03) 51 8421

BRISBANE Telecomputing, 2039 Moggill Rd,
Kenmore, Qld 4069 Tel: (07) 378 4798



Overcoming the difficulties of Pascal

Peter Feldmann looks at 12 utility programs which add functions to Turbo Pascal and Ian Robinson investigates two Australian entries

Turbo Pascal has had a significant impact on the PC programming community. Borland International's low-cost efficient Pascal compiler has made it possible for many amateur and novice programmers to try their hand at a compiled language, with its advantages of fast, easily modifiable, and source-protected code.

Unfortunately, Pascal is not as easy to learn as BASIC. Its structured programming and strict typing of all variables and constants can be confusing to the beginner. It also has severe deficiencies as far as screen I/O (input/output) functions go. Writing programs that ask for input from the user takes many more steps to complete than similar functions in BASIC.

Many third-party vendors are compensating for Turbo Pascal's deficiencies with an assortment of programming utilities that do

everything from providing prewritten I/O procedures that enhance your own programs to generating entire database programs from scratch. Many of these programs will get you up to speed with Pascal in days or weeks instead of the months a beginner would ordinarily need. The level of Pascal and programming knowledge expected from the user varies with each utility, as does the ease of modifying the routines and including them in your Pascal programs.

Most of these programs work via the Pascal INCLUDE file. When you write a program, you refer to predefined functions and procedures which are included near the beginning of your source code. The process is similar to using a GOSUB routine in BASIC, except that you do not need to worry about program line numbers here: each procedure is accessed by name. (Refer to either the Turbo

Pascal reference manual or The Turbo Tutor for more information.) A few programs also use precompiled .COM files as EXTERNAL procedures; these are particularly nice because they save valuable compiling time without adding much to the size of your program.

It is not surprising that some of the best Turbo Pascal programming utilities are offered by Borland itself. Each of Borland's Pascal Toolbox packages includes one or more disks and a paperback manual very similar in style to the Turbo Pascal manual. The programs in the Toolbox series are crammed with excellent routines, procedures, functions, and programming examples, including a lot of source code to print out and study.

The Turbo Tutor

For users new to the world of strictly typed variables, functions, and



Qubié announces the BT20 Hard Pack for the PC

The slot mounted 20 Megabyte hard disk system fits in one slot of a PC. The unique side by side design allows it to be plugged into slot 5 and nestle behind your floppy disk drive(s). (Slot 7 on the PC/XT).

Ability to run a second drive from its controller giving you 40 megabytes of storage.

Software included for diagnostics, formatting, and included is 1DIR, the hard disk organizer, a \$95.00 retail value.

BENEFITS:

Ability to run 2 floppies in the PC, OR 1 floppy and an internal back-up unit OR an additional internal drive with the Qubié 20megabyte HardPack.

- Drive Manufacturer: Tandon
- Drive Surface: Chromed
- Drive Size: 3.5"
- Controller Manufacturer: Basic Time (Qubié)
- Controller Size: 5.25"

Recommended retail price:

\$1599.00

Inclusive of sales tax

**Available at:
Your local PC dealer NOW!**

Telephone (02) 579 3322

QUBIE

procedures. The Turbo Tutor is the place to begin. Its disk contains 25 demonstration programs that cover many aspects of Pascal programming, including function key handling, directory access, I/O error checking, a Microsoft Mouse interface routine, a serial port library, and a sample game. One particularly useful program, `LISTT.PAS`, contains the source code for a formatted printer listing of Pascal programs.

One handy feature that The Turbo Tutor lacks (as does the Turbo Pascal manual) is a quick reference card with a complete alphabetic listing of all functions and procedures available. They are listed in the index, but there they are divided into categories such as "standard functions" and "turtle graphics procedures," so you have to know where to look in order to find a specific function. The Turbo Tutor and the other Toolbox packages would also be more accessible if their manuals were in three-ring binders instead of paperback books. Alternatively, several large stones used as paperweights will help you hold these reference works open at the right page.

Turbo Graphix Toolbox

Graphics applications is an excellent area for Pascal programming: Pascal beats BASIC hands down in speed and authority when handling graphic routines. The Turbo Graphix Toolbox, Version 1.05A, includes 115 procedures and functions ideal for graphics programming, and each one is listed in the accompanying manual with a complete description and an example of its correct use.

The Turbo Graphix Toolbox routines are compatible with IBM's standard and enhanced color/graphics system, as well as the Hercules graphics card and its true compatibles. The 27 sample Pascal programs include many demonstrations of the proper way to use these routines. Some of the more interesting ones include operations on windows (areas of the screen that can

be independently opened, cleared, closed, and overlaid on each other), bar charts and histograms, and world coordinate systems that establish where on the screen each window or graph will be located. Pie charts, logos, x - y labels for graphs, and three different graphic character fonts are also included.

All of the program's functions and procedures are clearly explained in the manual's reference section. In addition, several sample programs illustrate the use of the Turbo Graphix Toolbox's various graphics functions.

Borland Editor Toolbox

With the Borland Editor Toolbox, Borland offers Turbo Pascal programmers a chance to create a new WordStar-like word processor of their own. This package includes two disks and a hefty manual that contains two complete word processing programs, FirstEd and Micro Star. Micro Star has most of WordStar's features, such as word wrap, paragraph reformatting, block moves, and auto indents, plus such additions as pull-down menus and a provision for opening a second text window in order to edit two files simultaneously. FirstEd is a simpler word processing program that demonstrates the basic function required by a text editor.

The complete source code is included, so you can modify these files to your heart's content and then recompile. In addition, you can give sophisticated word processing capabilities to other programs that you write by including the text-editing feature from this package.

Another nice feature of the Borland Editor Toolbox is its built-in "hooks" for attaching other programs to it — commercial ones and programs you write yourself. You can call up Turbo Lightning, for example, to run a spelling check on an entire file or a marked block of text. Micro Star can also be configured for multi-tasking; in the multi-tasking mode you can print text, back up a hard disk, or send or receive a file by modem while

simultaneously editing text.

The source code for Micro Star is a good example of well-structured programming, with each word processing function enclosed in its own module. Each of these modules is listed and described in the accompanying manual.

Turbo Database Toolbox

The Turbo Database Toolbox supplies instructions, sorting and indexing routines, and several sample programs to start you on programming tailor-made database applications. The manual steps you through the basics of data files, with additional information and programming examples of data files, multiple keys, data indexes, binary searches using B+Trees, and more.

The manual claims that a detailed knowledge of procedures like B+Tree multi-index searches is not required in order to use the procedures in this package. In case you want to inquire into such complex programming practices, a fairly thorough introduction to B+Tree routines is included. You can use the INCLUDE files that are part of the package to write your own database system, but before attempting such a large-scale project you should take the time to become familiar with all the topics discussed in this manual.

The disk includes files that give you access to the data records and keys on which the records are to be sorted, with modules on adding, finding, and deleting records, plus B+Tree routines to patch into your programs. An Install utility lets you install programs you have written for clients in their specific terminals. The disk also contains sample database programs consisting of simple customer and inventory lists.

Turbo Power Tools

Although Turbo Pascal itself lists for \$175, professional programmers aware of Blaise Computing's reputation are quite willing to pay more for Turbo Power Tools, Version 1.0, an add-on collection of



programming utilities.

Turbo Power Tools comes on three disks that contain more than 100 INCLUDE files covering a wide variety of programming functions. There are 14 file-handling routines for creating, opening, reading, or setting file attributes, dates, and times as well as handling DTAs (disk transfer addresses), six memory management routines, 11 string functions, 18 routines governing screen I/O (including routines that permit horizontal as well as vertical scrolling), 12 for multiple-window management, 11 dealing with the IBM keyboard, 10 DOS utility functions, 14 procedures for directory maintenance, and six routines for memory management that can allocate, free, and alter memory blocks (including AT extended memory). Five routines deal with program control, including executing DOS commands, terminating and setting exit codes, and even terminating and remaining resident so that you can code memory-resident programs in Turbo Pascal.

The Turbo Power Tools manual fills 146 pages with individual descriptions on each procedure and function with an example of its use and a list of INCLUDE files necessary to call the routine correctly. The documentation is divided into ten

chapters, each dealing with the procedures governing one aspect of Pascal programming. Each section has a well-written introduction that supplies much useful information on the best way to use the Turbo Power Tools routines, as well as standard Turbo Pascal procedures. The nine appendices includes a quick-reference guide, a summary of all Turbo Power Tools data and variable types, a comparison of screen and window management, suggestions for troubleshooting and program development, installation instruction, a DOS error-code summary, and instructions for the Turbo Power Tools utility programs.

The Turbo Power Tools utilities and demonstration programs alone make the package worthwhile. INCLUDE.PAS generates lists of INCLUDE files needed for programs you write and places them in the correct order for most efficient compilation. PROCPAK strips the comments from the Turbo Power Tools INCLUDE files to make compilation faster and generates paginated listings of program files.

Also included in the Turbo Power Tools package are two sample programs. CLOCK.PAS establishes a runtime clock that displays the system time on the screen and can display a message and ring an alarm at predetermined intervals. It can also be removed from memory or have its alarm, message, or text color reset. MKEY.PAS (for Modest Key) is a keyboard macro utility complete with pop-up windows and many (but not all) of the features usually found in programs such as ProKey. It can be installed and then removed from memory at the user's option.

A high degree of professionalism pervades the entire package. Turbo Power Tools' only deficiencies lie in the field of graphics management, where its range is limited to ASCII or text mode screen and window support. With this exception, Turbo Power Tools is the best support available for Turbo Pascal programming.

Turbo Asynch

Turbo Asynch contains functions for programmers working with asynchronous communications and using the UART (universal asynchronous receiver and transmitter) chip found in the PC and AT. Blaise Computing has divided the package's support routines into two distinct levels. The lower-level (Level-Zero) routines are written in assembly language for efficiency and speed. They come in source (.ASM) and assembled (.OBJ) versions that you can use directly or via the high-level (Level-One) Pascal procedures contained in .INC files.

Strict compatibility with the IBM design is required in order to use Turbo Asynch because it makes calls directly to the UART and 8259A Programmable Interrupt Controller found in the IBM PC and AT. Level-One functions also use RS-232 BIOS function calls.

The manual contains a very readable introduction to asynchronous communication techniques, along with a complete listing and description of the six low-level and 18 high-level functions. A quick-reference guide and comments on two sample programs to send and receive messages and test the functions are included as appendixes. Blaise also includes information on printing the Turbo Asynch source code, creating a test environment, and constructing test hardware (a null modem) to check your serial ports.

Since the Level-Zero functions cannot be linked directly to the Turbo Pascal programs created with the Level-One procedures, a .COM file is included (along with its source code in C) to establish the Level-Zero functions in memory; you can call them from there using a software interrupt vector. Level-One functions include procedures to open and close comm ports, set transmission options, read and write characters or strings to and from the port, return the line and modem status, check on and drain the I/O queue, and send a break signal.



Top service and super savings



	RRP	Our Price
1. Lotus 1-2-3	835	529
2. Displaywrite 3	825	Call
3. Word	595	439
4. dBase III plus	1095	675
5. Multiplan	365	269
6. Wordperfect	685	449
7. Wordstar	445	299
8. Multimate	875	699
9. Open Access	995	659
10. Framework	1095	719

PRINTERS & PLOTTERS

Epson:	- FX105 (160 cps)	950
	- LQ1000 NLQ (180 cps)	1399
	- EX80 (300 cps)	995
NEC:	- LX80 (100 cps)	Call
	- New Release P6	Call
	- New Release P7	Call
	- P5	1599
Brother	- C Itoh & Toshiba	Call
Roland	- DXY 880 Plotter	1889

MONITORS

Composite	189
Hi Resolution Mono	259
Hi Resolution Colour	649
Super Hi Resolution	Call

Top Brands: Taxan, Roland, Qubie, AAT

DISK DRIVES

Seagate 20Mb	1099
Tandon, 20Mb	1150
Mountain 20Mb drive card	1890
Rodime 40Mb	1899
Installation Support Provided	

BOARDS AND OTHERS

AST 6 Pack (includes \$250 sware)	399
AST Rampage to 2Mb	595
AST EGA	545
PC Memory Expansion	150
Herc compatible graphics	250
8087 Math co-processor	Call
Installation Support Provided	

MODEMS

Netcomm - 1234A (4 speeds)	1350
- PC in modem	465
Sendata (3 in) internal	875
Complete Range	Call

OTHER

Tape back-up - 60Mb Wangtek	1999
- 20Mb Sysgen (ext)	1575
- 10Mb Irwin	1290

SUPPLIES - Disks DSDD per 100	195
- Disk Storage	22

MAINTENANCE CONTRACTS ALL STATES Call

BARGAIN PACKAGES

Spreadsheets	- V.P. Planner	149
	- Twin	165
Wordprocessor	- PFS Write	159
	- Textra	99
	- Ready	49
Database	- Reflex	149
Languages	- Turbo Pascal	89
	- MS Quickbasic	149
	- DeSmet C	195
Operating Systems	MS-DOS & GW Basic	165

Call (03) 417 7044

MORE LINES - MORE SERVICE

SOFTWARE - IBM

Spreadsheets	- Lotus 1-2-3	529
	- Supercalc III	479
	- Multiplan	279
Wordprocessing	- Wordperfect	449
	- MS Word	439
	- Wordstar 2000+	479
	- Multimate 3.3	525
	- Multimate Advantage	699
	- Thinktank	229

Database	- dBase III Plus	675
	- Paradox	789
	- R Base 5000	880
	- Dataflex	995
	- Clipper (dBase compiler)	725

Integrated	- Framework	719
	- Enable	729
	- Open Access	659
	- Symphony	709

Utilities	- Copywrite	89
	- Norton Utilities	129
	- Smartkey	89
	- PC Alien	89
	- Printworks	99
	- Sideways	89
	- Keyworks	115
	- Xtrieve	89
	- Homebase (more features than sidekick)	89
	- 80 Mate (runs CPM	295
	- 80 Prog)	99
	- dToolkit	99

Training	- PC Tutorial	65
	- Typequick	69
	- Touch	59
	- Instructor & Professor Dos	157

Project Management	- Timeline	569
	- MS Project	382
	- Harvard Project Mment	490
	- Superproject Plus	569
Operating Systems	- Dos 2.1	99
	- Dos 3.1	109
	- MS DOS & GW Basic	165
	- Concurrent PC DOS	435

Communications	- Crosstalk	159
	- Smarterm	Call
Accounting	- Dollars and Sense	225
	- Business Manager	595
	- CPA Plus	670
	- Integrity	Call

Personal Development	- Mind Prober	69
	- Mindover Minors	79
	- Negotiation Edge	295
	- Sales Edge	245
	- Communication Edge	195
	- Management Edge	245
	- Expert Ease	645

GAMES IBM AND APPLE Call

BORLAND

Turbo Pascal, 8087, BCD from	89
Database toolbox	85
Graphix toolbox	85
Editor toolbox	89
Tutor	74
Gameworks	65
Turbo Lightning	115
Superkey	89
Sidekick (Unprotected)	75
Turbo Prolog	Call
Reflex	149

Our top service includes:

1. 3 Months free HOTLINE SUPPORT on all hardware and software purchases.
2. 24 HOURS DELIVERY. (If we cannot deliver the current version ex-stock probably no-one can).
3. 12MONTHSFREE 4P membership with orders over \$600.
4. All products fully supported by Official Australian Distributor and backed by our own guarantee.

TOP VALUE SYSTEMS

\$4750 (incl. tax)	Quality Boards	8Mhz Performance	PC of the Year Award Winner	640K FDD 20Mb Mono Screen DOS Basic
\$3650 (incl. tax)				
\$2899 (incl. tax)	640K FDD 20Mb HiRes Mono Screen	512K FDD 20Mb Mono Screen DOS 12 mths. Warranty		
	IBM Compatible	Epson PC HD	Olivetti M24	

MICROSOFT

LANGUAGES	- Macro Assembler	299
	- C. Compiler	725
	- Fortran Compiler	495
	- Basic Compiler	540
	- Others	Call
UTILITIES	- MS Windows	165
	- MS Chart	386
	- MS Sort	315
APPLICATIONS	- Multiplan	279
	- Multiplan for Macintosh	279
	- Word	439
	- Word for Macintosh	290
	- Excel for Macintosh	530
	- R Base	880
	- Project	392
	- Flight Simulator	89
PERIPHERALS	- Mouse Bus or Serial	240
	- if purchased with WORD	160

NOTE:

1. Delivery and Insurance only \$7.50 (on all software, boards and accessories)
2. Bankcard and Visa Cards Accepted
3. Call for products not listed
4. All prices include Sales Tax
5. Prices are correct at time of printing but may alter without notice



The Computer Trader
98 Hoddle Street,
Abbotsford 3067
(03) 417 7044

Viatel Computers

Max Elliott's make a \$\$\$\$Sale
You save a \$ we make a \$
Limited stocks:

Canon A-200 computer
complete with monitor \$3400
(incl. tax)

NEC APCIII fitted 10 Meg.
drive *640K diskdrive
complete with monitor
\$3800 (incl. tax)

Sendata 1200/1200 AA/AD
\$760 (incl. tax)

Sendata Internal

300/1200-75 AA/AD \$610

Sendata 300/1200-75 \$380

Teledat 300/1200-75

Auto Answ. \$370

Modemphone 300/1200.75
with phone \$220

Commodore Modem for
Viatel inbuilt software \$299

ASI-PCXT 640K with the lot.
This is a business computer
\$1650 — Not a cheap import

★The new portable portable★
Weight 6kg with 5 1/4" drive
512K RAM infra red keyboard
80x24 adjustable display
Introductory offer
\$2300 (excl. tax)



Vic.:

ABE COMPUTERS

(03) 288 9067

Vic.: *Viatel Computers*

(03) 288 2144

SA: *Whyalla Copy Centre*

(086) 45 7755

Qld: *Grand Computers*

(07) 345 6911

TURBO PASCAL



FirsTime for Turbo-Pascal

FirsTime for Turbo-Pascal is a program editor with a difference: it "knows" the programming syntax and structure of Turbo Pascal. If you need some help in generating Pascal programs, do not want to read all the manuals, and do not mind having someone constantly looking over your shoulder and pointing out your mistakes, FirsTime is the editor to try.

FirsTime is supplied on two disks: One contains the editor and support files, the other an on-disk tutorial. The reference manual contains about 200 pages of well-indexed instructions, an alphabetical listing of the programs' place holders, and a command-key summary and listing of error messages.

To write a program with FirsTime, just type FTD and press the Enter key. You will be greeted with a brief logo screen that quickly clears to show the edit screen with the current function key assignments. FirsTime is designed so that you almost automatically follow correct programming practice when you enter Pascal source code. For example, the first command acceptable to FirsTime is a program name identifier. It will then accept declarations of constants, types, and variables.

Each time you enter a statement, the range of possible choices at that

programming point is displayed near the bottom of the edit screen (similar to the BASIC editor screen). Using a combination of function keys, the Alt and Ctrl keys, and alphabetic keys, you enter the program and check it for syntax simultaneously. Each logical portion of code (for example, an IF-THEN-ELSE structure) is highlighted in intense video while you are editing it, which makes it easy to see the interrelationships of all the lines in a particular program module. All reserved words are written in capital letters, which also helps you keep track of the program's structure.

FirsTime works by creating a special configuration file in memory while you are entering a program. This file, which is saved to disk at the same time as the program source code and has the extension .FPT, keeps track of every statement in the source code (and corresponding INCLUDE files). If you ask the program to edit a pre-existing program, it creates the .FTP file while the program is being read into memory and will later write the file to disk if you wish.

FirsTime is great for checking code syntax in existing programs. Its zoom feature allows you to choose the nesting levels of your source code: only the levels chosen will be shown, with (. .) indicating program levels underneath the ones chosen. The editor allows standard editing procedures such as deletes, undeletes, and text searches, but it checks all such functions for possible syntax violations before accepting them. If you wish to avoid this syntax checking, you can toggle the editor into a regular full-screen editor with the Esc key. You can ask FirsTime to check the source code at any time to ensure proper syntax and structure.

Moving around in FirsTime is an interesting experience. You can move the cursor with the cursor control keys, but as you move from one program unit to another, the entire logical unit at the moment is highlighted. FirsTime is handy and useful as long as you do not mind a nagging computer.

FROM BORLAND

TURBO FAMILY

Get your PC really moving

TURBO PASCAL 3.0

With over 250,000 users worldwide Turbo Pascal is the industry's de facto standard. And now, with version 3.0, the world's fastest Pascal compiler is twice as fast! A full-screen interactive editor is built-in and for IBM PC versions we've included turtle graphics and full tree directory support. Available for most computers running PC DOS, MS DOS, CP/M 80 or CP/M 86. And you pay no royalties! Turbo Pascal \$135.00 Turbo 87 \$176.95 Turbo BCD \$176.95 Turbo BCD + \$249.95

TOOLBOX

The perfect complement to Turbo Pascal, Turbo Toolbox gives you three fundamental utilities: Turbo-ISAM files using B+ trees; Turbo Sort; and GINST (General Installation Program). You get fully documented source code for these essential utilities. Turbo Toolbox also includes the source code for a complete ready to compile and run database. You get all this for just \$99.95.

Turbo Tutor

The Pascal tutor for everyone from novice to expert. Even if you've never programmed before, Turbo Tutor will get you started right away. If you already have some experience with Pascal or another programming language, Turbo Tutor will take you step by step through topics like data structures and pointers. If you're an expert, you'll love the sections like "How to use assembly language routines with your Turbo Pascal programs." All the examples in the book are included as source code on the disk - ready to compile. And it costs just \$67.95

\$135.00

GRAPHIX TOOLBOX

The Turbo Graphix Toolbox will give even a beginning programmer the expert's edge in dazzling graphics on the IBM PC. It's a complete library of Pascal procedures including window management; tools that let you draw and hatch graphs and shapes; curve plotting functions; animation tools and lots more. You get commented ready to go source code for all these functions. The price? Just \$99.95. And no royalties!

\$99.95

Infoworld's (USA) Software Product of the Year. Now whether you're working in your word processor, spreadsheet, database - whatever, Sidekick will be there. Giving you a notepad, appointment calendar, calculator, phone directory and ASCII table. All instantly available without leaving the program you're working in. Just think how much more use you'll get out of your PC with Sidekick. Yours for just \$99.95 (copy protected). Non-copy protected \$159.95

\$99.95

STOP PRESS

TURBO LIGHTNING

The complete in-memory resident dictionary and thesaurus. Works with most popular programs. IBM PC only. \$199.95

TURBO PROLOG

Just released. Learn to program real Artificial Intelligence. Fast. Elegant. Borland! IBM PC only. \$249.00

REFLEX

The complete Analytical Database. Fast. Graphs. Spreadsheets-like calculations. Price to rise soon. Be early.

Software Source Pty Ltd

Distributed by
Software Source Pty Ltd
PO Box 311 Bondi Junction
2022 Call for your
nearest dealer
(02) 389 6388



Tools for Turbo Pascal

Tools for Turbo Pascal's single disk contains 44 INCLUDE files with procedures and functions to be incorporated into your Turbo Pascal programs. No printed manual is supplied, but a "Readme" file on the disk contains all the information you need to use the program. The INCLUDE files are small and well organised, with specific functions grouped logically. The programmer can choose a tight cluster of INCLUDE files to keep final program size as small as possible.

Three dozen 200 to 400-byte sample programs demonstrate the use of the procedures supplied. Tools for Turbo Pascal also contains larger programs with examples of directory handling and sorting routines using string, integer, and pointer keys.

The examples of pointer use make this package especially valuable to anyone experimenting with database programming.

Another interesting set of routines handle the redirection or "piping" of I/O in DOS 2.0 and later versions. SYSIN and SYSPRINT use DOS functions 3Fh and 40h to read and write to or from a device in 128-byte blocks. These procedures function in a debugging routine to display registers and flags to the printer. Such pipes can serve in a variety of ways to modify data in any file, or to pipe it to

another device such as a printer or a new disk file.

GTP Program Development System

The GTP Program Development System program generator is perhaps the most ambitious Turbo Pascal accessory reviewed here. The program claims to be able to generate a complete database program from a user-supplied data entry screen. Since the output code (and the source code for the program generator itself) is in Turbo Pascal, you can make alterations and additions if needed.

In theory, it is a great idea. As with anything automatic, however, the GTP package has its limitations. The maximum size of the data screen is 75 lines, which restricts applications to three data entry screens. You are also restricted to 30 fields in any one database, unless you make considerable modifications in the generated source code. Since the source code for the generator itself is included in the package, a clever programmer can make modifications to bypass these limits. But with all the demands on a typical programmer's time, is it worth it?

GTP is a great package for programmers who need to produce a simple database application in a limited amount of time. It takes less than 15 minutes to generate the complete code for such a simple application, not counting a minimum of three to six hours of going through the manual to acclimatise yourself to the program's *modus operandi*. A tutorial script helps you to generate your first program.

The variable names created by the GTP generator look intimidating at first, but a reference skeleton program in the manual helps sort out the names, procedures, and program structure. After you are familiar with the program's logic, you should be able to generate programs quickly.

GTP is not the best program for beginners because any type of modification requires some knowledge of Pascal structure. Studying and modifying the program's source code

is certainly a valuable experience, but your time could be better spent in writing a database from scratch. The real value of a program generator like GTP lies in repeatedly generating routine databases. If you are planning on writing several small to medium-sized databases, it is worth considering.

Turbo-Plus

Turbo-Plus offers the Turbo Pascal programmer strong support in writing data to the screen, handling input from the keyboard, and manipulating files. Unlike the procedures of other programs in this review, almost all Turbo-Plus procedures make external calls to .COM files supplied on the program disk.

Each of the 40 .COM files supplied with Turbo-Plus (the .ASM source code is not included with the program) is used in one or more of the function calls in the 15 sample programs. The advantage in using calls to external .COM (binary) files lies in their speed of execution and in the fact that, unlike INCLUDE files with procedures written in Pascal, these files do not have to be recompiled each time you revise the source code.

The functions dealing with screen mapping create impressive screens with much less effort than working in Turbo Pascal would normally require. Final program size is also kept to a minimum. For example, to write a specified string to the screen, you would call FastWrite, a routine that writes the string to the screen and at the same time sets the foreground and background colors and the cursor size all in one operation. Since the string is written directly to the video buffer, it appears on-screen almost at once.

Turbo-Plus's procedures include utilities to reset either screen attributes or text — or both at once. One of the most powerful routines, MapField, can display a message to the screen and accept user input that can be edited and then checked for proper type and syntax. Variations of the MapField function handle strings and

real and integer input.

A graphics mode allows you to display characters of varying size while in any of the three standard graphics modes. The RamWindow function, a diagnostic tool, can save the current screen and display a hex/ASCII dump at any point in the program: you can page through memory for information, then restore the cursor and previous screen to continue working with the program.

The small manual is not well laid out. It lacks an index and a comprehensive list of procedures, leaving you to print out sample programs in order to understand how the functions are used.

Screen Genie

Screen Genie is perhaps the easiest-to-use screen generator reviewed here. Program flow is intuitive, and it is easy to make changes in the screen file. An on-line help screen is always available (and may be kept in another drive or path for convenience).

You simply type text on the screen. Borders can consist of any of the 255 possible IBM characters; you can "freeze" a border on the screen while making changes inside its boundaries without jumbling up the edges. Input fields are delimited with a function key. Data entry fields can be set for text, real, or integer input with range checking installed automatically. The screen can be saved.

The next step allows you to generate four different types of files useful in Pascal programming: function calls (to be used with the MapField procedure, which organises the screen), linkable .OBJ files (for MS Pascal), "callable" .COM files (for Turbo Pascal), or .COM files that can be invoked directly, via a .BAT file.

Screen Genie is not a program generator, but it certainly gives you a quick way to get your input and menu screens working with a minimum of coding time. The manual is small and lacks an index, it is laid out in such a way that it is productive to read the last half before you read the first.

Turbo-Spawn

One of the Turbo Pascal's severest limitations is its inability to generate programs that use more than 64K of RAM. Turbo-Spawn lets you get around this limitation by providing a "callable" subroutine that can "spawn" another program from within a file produced by the compiler. Parameters can be passed to the new "child" program and returned to the "parent". For example, you can set a program to call WordStar and edit a given file by including the Turbo-Spawn procedure in your program and passing it the command line "WS sample.fil".

You must size your free dynamic memory to allocate space for running a program spawned by Turbo-Spawn. If you do not, the program will not run. The disk includes the subroutine SPAWNOST.COM, as well as the

RamWindow routine from Turbo-Plus, to help you set the maximum free dynamic memory in the Turbo Pascal compiler's Options menu.

Three sample programs demonstrate the execution of any other .COM or .EXE file from within a .COM program, as well as parameter-passing operations. Also included are the source code to the sample programs and error codes in case the program to be spawned is not found or there is not enough memory to run it from within the parent program.

Turbo-Spawn is supplied without any manual beyond a single data sheet, but that is really all you need. ■

Peter Feldmann is a California-based free-lance writer.

GET ORGANISED!



With the paper supply neatly contained within the stand, your work area is neater, and your printer is instantly moveable—without leaving a paper trail.

With a Mac Designs PRINTER STAND

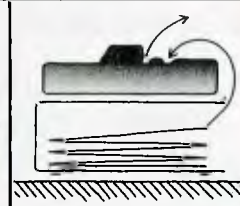
- Attractive smoky perspex
- Sturdy construction
- Space-saving design
- Realistic prices
- Made in Australia

Convenience, good looks and high quality are all built in.
Two sizes fit all popular desktop printers
80 column: 420mm x 350mm x 90mm
136 column: 620mm x 390mm x 110mm

Solves this...



and this.



Order today (03) 439 6575

To: Mac Designs, PO Box 59,
Diamond Creek, Vic 3089

Dealer enquiries welcome

Please send me:

QTY	SIZE	PRICE	SUB-TOTAL
NAME	80 Col.	\$69	
ADDRESS	136 Col.	\$97.50	
Add \$5 per stand, freight & handling			
TOTAL			

PAYMENT BY ☐ Cheque ☐ Money Order ☐ Draft ☐ Bankcard



Expiry Date

Signature

A division of
D. R. McEwan
& Assoc. P/L
(inc. in Vic.)

PC 103

Picking up the gauntlet

Australian Turbo Pascal programmers have not been slow to take up the challenge in creating utilities and toolboxes, and two such entries are Turbo Upstart and Turbo Trivia Toolbox.

Turbo Upstart is the creation of Cybersoft, a Sydney-based company that is also responsible for the Gateway videotex package (see page 53). Turbo Upstart allows programmers to create their own memory-resident or 'pop up' programs and includes all the tools to save, copy, move, restore, display and overlay screen windows.

The SLEEP function can be used to make any Turbo Pascal program memory-resident, so that it pops up on the screen whenever the pre-selected 'hot key' is pressed. The ALARM function allows programs to pop up at pre-determined times with full date and time query functions.

Programmers will be pleased to know that other routines in Turbo Upstart allow you to check what type of display card is installed (color, mono or Hercules), which is the current disk drive and directory, and what serial port parameters are being used. These routines also allow you to change these system parameters.

The critical error handler will capture I/O errors any time your

Turbo Pascal program is running and pop up a warning in a screen window — and you can even specify the error message! A routine is also included to examine and change disk file attributes, including time and date and another routine allows you to run another program and return.

The generic title 'Turbo Pascal utilities' covers a broad range of products, and the Turbo Trivia Toolbox is something completely different again, tackling an entirely different market niche. The developer is Computer Trivia, of Melbourne which just goes to show that not all good Australian software comes from Sydney (although doubtless there are many who will dispute this.)

Trivia Toolbox is based around a simple quiz program which cycles through a round of True/False questions relating to a particular topic. Each is contained in a separate date file or 'book' and all of the tools necessary to create and modify these books are in the Trivia Toolbox. Each piece of information is entered as a 'fact' which includes the correct answer plus an arbitrary number of distractors. For example, you may enter "The editor of PC Australia magazine is : Ian Robinson : Vi Adelle : Clive Lassiter :". The fact can be presented as a statement, then a

True/False answer is requested. A randomising function makes sure that the statement is presented differently each time, so that the question set is always displayed in a differing way.

A collection of sample fact 'books' with the Turbo Trivia Toolbox includes titles as diverse as royalty, pop music, computer magazines and PC-DOS. In fact, there is enough material to warrant purchasing the program simply for its entertainment value, but of course the real benefit is gained by exploring and using the toolbox routines.

All of the source code for the routines is included in the Turbo Trivia Toolbox, which makes interesting reading in itself.

These two Turbo Pascal utilities have been developed completely in Australia, and from what I can gather around the traps, many more such products are on the way.

— Ian Robinson

Turbo Upstart \$149
PC Extras
PO Box K9
Haymarket NSW 2001
(02) 319 2155

Turbo Trivia Toolbox \$39.95
Computer Trivia
9 Monash Avenue
Olinda Vic. 3788
(03) 751 1263

Where to find the utilities

FirstTime for Turbo Pascal
Spruce Technology
198 East Bergen Place
Red Bank NJ 07701
(201) 741 8188

Turbo Plus \$110
Screen Genie \$149
Turbo-Spawn \$149
PC Extras
P.O. Box K9
Haymarket NSW 2001
(02) 319 2155

Turbo Power Tools
Turbo Asynch
Software Source
P.O. Box 311
Bondi Junction, NSW 2022
(02) 389 6388

Turbo Tutor \$70
Turbo Graphix Toolbox \$99
Borland Editor Toolbox \$115
Turbo Database Toolbox \$99
Acom Pacific
P.O. Box 13
Clayfield Qld 4065
(07) 52 9522

Tools for Turbo Pascal
GTP Program Development System
Allen, Emerson and Franklin Inc.
P.O. Box 928
Katy TX 77492
(713) 391 8570



INCLUDES FREE
HALLEY FINDER
AND MANDEL
ZOOM
PROGRAMS



We've sharpened our pencil to sell you a **STYLUS**.

STYLUS is a radical breakthrough. It's a new tool for designing PC programs.

STYLUS is a flowblock editor and translator. That means you simply *design* the program — and STYLUS *codes* it all for you in PL/I, dBASE II or BASIC.

The concept of the flowblock dates back to 1973 but it was not until 1985 that it was delivered to the PC user. Now STYLUS is available for IBM, Apricot, Olivetti, APC III and Panafacom.

STYLUS makes you more efficient — and makes maintenance a breeze. To learn more about it, just send the coupon for our brochure.

But to learn a *lot* more about it, here's our special sharp-pencil offer. Send \$25 as well (or charge your Bankcard) and we'll send you the whole demo kit. If you don't fancy STYLUS after 30 days, send it back and we'll refund the \$25. But if you find life will never be the same without it (and it won't) get our introductory 20% discount by sending only another \$95. That's \$30 off the regular price!

Be sharp about it. Clip the coupon right now. Try STYLUS and...

To be blunt — you'll buy it!

STYLUS

UCF 7218

Mail to: Grouse Bell, Box 297,
Neurtral Bay Junction, NSW 2089
(02) 908 3458
Phone Orders Accepted



From

..... P Code

- ☐ Send the demo kit (\$25 00)
- ☐ Send the full system (\$120 00)
- ☐ Version required
- ☐ Here's my cheque money order
- ☐ Charge my Bankcard, Mastercard

No

Expiry Date

Signature

AUSTRALIAN EXPORT

\$99 PLUS TAX

WAS \$220 PLUS TAX

V21 MODEM

BEST IN ITS CLASS

ENTRY LEVEL. SUITABLE FOR BULLETIN BOARDS AND DATA BASES. 12 MONTH WARRANTY

99 DAY OFFER

SENDATA

Melbourne: (03) 568 6299. 11 Stamford Rd. Oakleigh 3166
Sydney: (02) 438 4255. 67 Nicholson St. St Leonards 2065

Why come to our bank when you can open your own?



All you need is a television, a telephone, our Telebank Keyboard or your personal computer, and you're ready for business.

Telebank is a unique service from the Commonwealth Bank.

Which allows you to bank at home or from the comfort of your office.

Reconcile accounts, manage funds, trade shares and even pay bills.

Day or night, 7 days a week.

Before opening your bank, we suggest you open our Telebank brochure.

Send us this coupon or phone us on (02) 232 6088, (elsewhere (008) 221 199 for the

cost of a local call) and you won't even have to come to our bank for that.

Freepost 140 TBK, Commonwealth Bank, (Electronic Banking) Box 2719, GPO Sydney 2001. (No postage stamp needed.)

Name _____

Address _____

Postcode _____

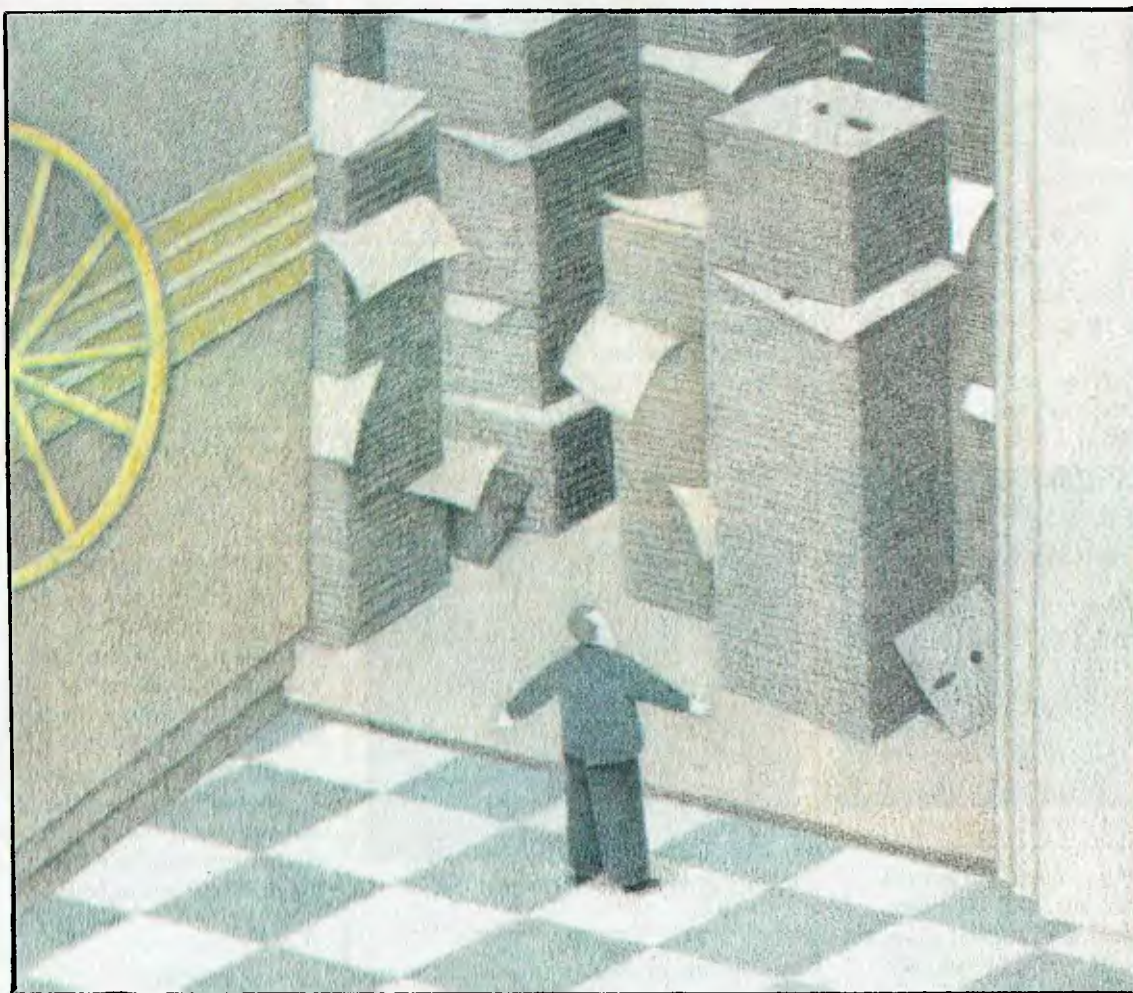
**COMMONWEALTH
BANK.**

Australia's leading bank.

CB796PCA

A class of its own

Tony Ward looks through Gateway to discover that it is more than just a videotex program

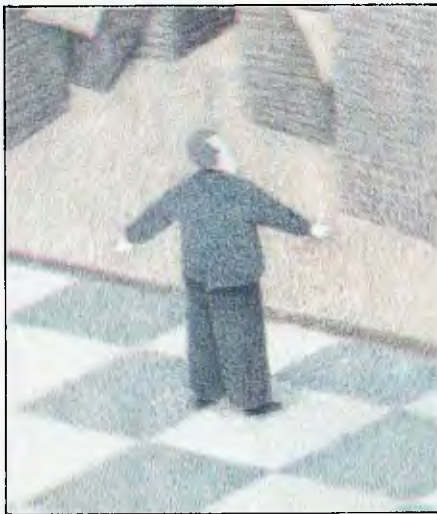


Once in a while you discover a program or piece of PC hardware that is so good it stands in a class of its own. The first time I saw Lotus 1-2-3 I was stunned by its power and utility. How was it possible to do so much on a personal computer? Lotus set a standard which four years later makes it probably still

the most widely used spreadsheet program and attracted a host of new users into the personal computing population. Having tasted success in the area of spreadsheets, graphics and database I started to experiment with communications.

This opened up the world of bulletin boards, PC-mainframe links and other external sources of data.

Progress was slow as I found communications involved a tedious round of telephone handsets, acoustic couplers and primitive software. Then, the NetComm InModem appeared on the scene, removing the tedium and making communications easy. The user sets the parameters once and the modem dials the number and makes the connection.



The InModem is an outstanding product, and NetComm's Smartmodem series (in particular the Smartmodem 1234SA) and the Trailblazer have maintained the Australian company's technical leadership.

With my InModem came a videotex communications package which, like many similar products,



Figure 1: Gateway's main menu.

attempted to overcome the limited capabilities of the Color Graphics Adapter. The resolution was poor, the screen updating was slow, and the software did little to show off the colorful graphics available on Viatel. Like a great deal of "bundled" software, this did not appear, and I could not imagine a business user seriously considering it. So I left the world of Viatel untapped.

The next generation

In late 1985 I saw a demonstration of Gateway, a videotex package from

the Sydney company, Cybersoft, which really changed my mind. This product is first class and it is obvious a great deal of work has gone into its development. The color and resolution is far better, although the



Figure 2: selecting a videotex service (Viatel).

screen update is still a little slow. (I am told that this has been overcome in Release 1.7). The software is far more than just a videotex program. It offers a menu facility to control both the online and offline functions as well as the system setup. From within the menu you can run external programs such as Lotus 1-2-3 and issue

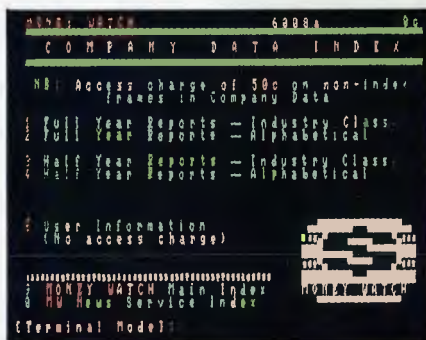


Figure 3: entering the Money Watch section.

commands to change directories, copy or rename files and print text files. The menu system is easy to use and help is as close as the F1 key. The user manual is hardly ever required, as all commands are easy to understand.

Gateway has the ability to automatically log on to Viatel, issue your user number and then "search and grab" selected information frames which can be stored for later use. The

online session can therefore be limited to exactly what you wish to view, with no lengthy menu sequences to plough through or clumsy page numbers to remember. An autodial modem is mandatory to take full advantage of Gateway's power.

The system configuration menu allows you to preset search details, using function key F7. A search and store file is specified. The search file can be prepared with Edlin, a word

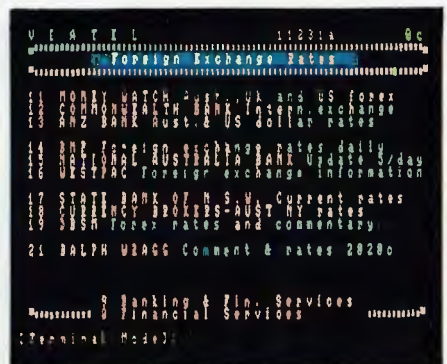


Figure 4: checking foreign exchange rates.

processor or a text editor. The Viatel page request commands are stored in the following fashion:

*8818832a#],*8818832b#],
*8818832c#],*8818832d#],

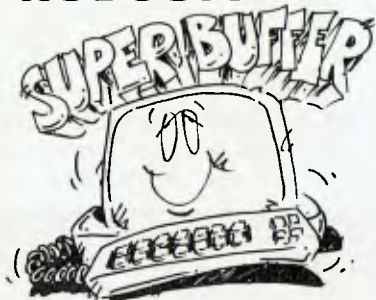
The square bracket tells Gateway to save the requested page and the comma acts as a separator. The above example is an extract of some of the Bond Data available under Money Watch (page *600#), which is the most heavily accessed service on Viatel.

Alternatively this example could have been a list of all the pages with share price information (page 781017 details the stock price information for BHP).

Offline functions

The saved file can be translated into an ASCII text file by using Gateway's offline functions (via the F5 function key). This can be directly imported into a spreadsheet (in Lotus 1-2-3, use / File Import Text Filename.PRN). Lotus 1-2-3 Release 2 and Symphony have string functions which enable numbers to be extracted from the text quite easily.

RODSOFT



Slash your computer's total disk access time by up to 75 percent for under \$100 with the **RODSOFT SUPER BUFFER**.

SUPER BUFFER is **GUARANTEED** to increase the performance of all file related tasks on an IBM PC or close compatible, operating MSDOS.

For example:

Load programs or word processing files in a fraction of the time. Search or sort data base information quicker than you ever imagined. Copy files and search directories in super fast time.

PERFORMANCE : A Norton Utilities disk test, file option, on a 10Mb hard drive took 8.2 minutes. With **SUPER BUFFER** installed, the same test took a mere 3.2 minutes, an incredible 61% saving, or a 256% increase in speed!

SUPER BUFFER is a memory resident disk cache program. It uses 71K of memory and will not cause any data loss if power to the computer fails.

Order your **SUPER BUFFER** now for **ONLY \$69**.

Send a cheque or money order to:

RODSOFT
267A Doghill Road
Baldivis W.A. 6167

Call (095) 241 220 or write for further information.

C.O.D. orders accepted.



ARE 510 PAGES OF YOUR BUSINESS DATA WORTH \$30?

Your company's computer files are your life blood. A corrupt character in the wrong place, could not only have grave implications for your cash flow – even if you have paper files from which you can reconstruct – but could throw your previously orderly business into turmoil.

Alloy Australia have developed a virtually fail-safe solution that costs as little as \$30 per megabyte of back-up storage.

The Alloy FT-60 streaming tape cartridge will take up to 30,000 pages of daily updated files at a time. And it does it automatically.

If your system should crash, the hair-tearing excuse 'I was going to do a back-up this week' could never be used. The FT-60 never forgets to back-up. It can be easily programmed to take back-ups of your hard-disk files hourly, daily, weekly, monthly – and without an operator needing to be there.

The file-oriented FT-60 plugs straight into the PC & XT external floppy port, and can be readily added to your AT or compatibles with our low-cost controller card.

The Alloy FT-60 is just one of the new Streamliner Series of back-up and storage systems now available from all leading PC dealers.



ALLOY

Alloy Australia Pty. Ltd.,

We back you up.

Suite 3, 318-322 Stephenson's Road, Mount Waverley,
Victoria, 3149. Telephone: (03) 277 1333.
Fax: (03) 277 6119. Telex: AA 152657.

ALL/A941

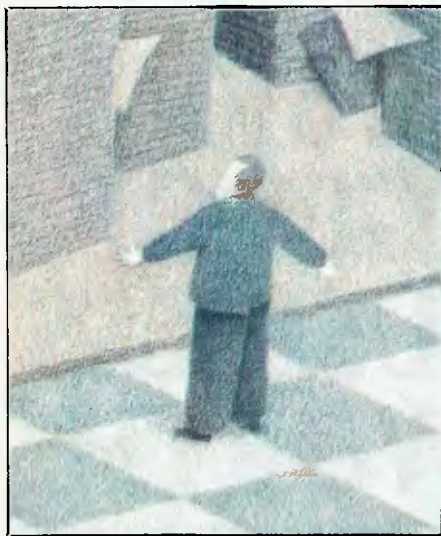


Figure 5: a typical company report.

program available from the Sydney PC User Group) could also be used to prepare the data.

Your share portfolio can look up these prices and revalue itself. Obviously it is better to update one share price manually but with 30 or 40, maybe not. This program can be used to set up a database of share prices or do further analysis. The amount of information obtainable from Viatel is mind-boggling.

The online functions allow you to view videotex frames in three possible modes. The first mode gives you an access screen with command boxes around the screen and the data in the middle, the second mode shows color without graphics and the third shows monochrome graphics. The command boxes display information on the time, the meaning of the function

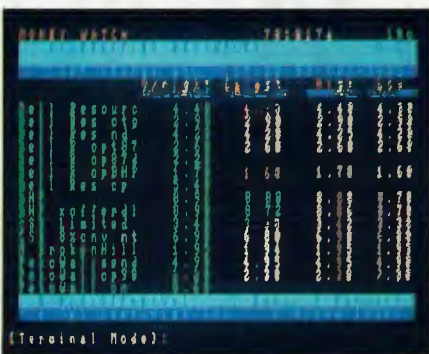


Figure 6: Gateway can capture frame data.

keys, file status, character counts and a few other useful tidbits. By depressing the F7 function key you can toggle into the other video modes. The color mode is excellent.

Future potential

What makes Gateway so good? It has been written largely in 8086 assembler, making it extremely fast and allowing superior screen control. The people behind Cybersoft, Heath

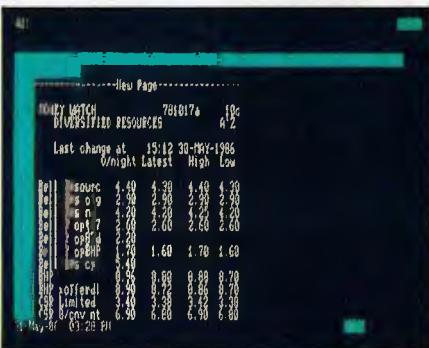


Figure 7: The same data moved to Lotus 1-2-3.

Rodgers and Douglas Scadlock, have put a lot of work into Gateway and it has paid dividends.

It is difficult to be critical of

Gateway, but there are some features that I would like to see in future versions. I believe a "script file"



Figure 8: Gateway's translation facility.

feature like that found in Crosstalk XVI would be useful, as would a macro facility. Repetitive commands within the menu structure could be replayed or programmed. Furthermore, it would be handy to know if the Caps Lock, Num Lock or Scroll Lock keys have been depressed.



Figure 9: specified frames can be extracted.

This can avoid some doubtful moments with passwords and the like. The menu system is so good that it seems a pity that Gateway does not include regular communications in the program.

GATEWAY

P.C. Extras
P.O. Box K9
Haymarket NSW 2001
(02) 319 2155

\$199

Tony Ward is the public domain software librarian of the Sydney PC Users Group.

THE PERFECT



PC EXPANSION

For PC XT AT & compatibles

- 30 – 150 Mbytes of formatted hard storage
- 60 Mbyte streaming tape back-up
- 5 extra expansion slots.

Qicstor-Plus enables you to expand your PC with the world's most reliable Winchester disks, a streaming tape back-up system, and five extra expansion slots – all in the one box.



With disk access times as low as 28 milliseconds and in-built error correction on all data transfers, 2 Mbytes/min file oriented streaming tape back-up system, Qicstor-Plus provides optimal expansion for all computer users.

It's the perfect partner for your IBM PC/XT/AT and/or other PC compatible that supports Direct Memory Access.

Fully serviced and supported in Australia, QICSTOR-PLUS is PC Network, Novell NetWare, 3COM Ether Series compatible. Now available from all leading computer dealers.

If you already have mass storage and back-up but are having trouble finding enough slots, or power for all the necessary peripheral cards – ask your local dealer today about the PC-XBUS – our 12 slot expansion box.

ALLOY

We back you up.

Alloy Australia Pty. Ltd.,

Suite 3, 318-322 Stephenson's Road, Mount Waverley,
Victoria, 3149. Telephone: (03) 277 1333.
Fax: (03) 277 6119. Telex: AA 152657.

ALL/A945

HARDWARE!

IBM* COMPATIBLES from \$849*

*256K RAM, single drive, disk controller, graphics and printer cards! **only \$849**

640K RAM, 2 disk drives, colour graphics, disk controller card, multifunction card, 1 parallel port and 3 months warranty. **\$1,395**

20 M/Byte Version **\$1,995**

IBM* COMPATIBLE CARDS

Motherboard (excludes RAM) **\$295**

Multifunction Card **\$329**

Multifunction Card with disk controller .. (excludes RAM) **\$295**

High Resolution Mono Graphics Card **\$249**

Colour Graphics Card **\$295**

Disk Controller Card **\$89**

Games Adaptor Card **\$49**

"IBM* AT STYLE" KEYBOARD Just like the "real McCoy" only at a fraction of the price! **only \$245**

JOYSTICKS for IBM*/Compatibles **\$39.95**

PRINTER CABLE for IBM* **\$20**

CHEAP DISKS!

MICRODOT 1-9 boxes 10+ boxes
5 1/4" D/S D/D \$22.95 \$19.95
100% certified and guaranteed!

VERBATIM 1-9 boxes 10+ boxes
5 1/4" S/S D/D \$24.95 \$24.50
5 1/4" D/S D/D \$32.45 \$32.00
5 1/4" H/Density \$99.00 \$89.00

ROD IRVING ELECTRONICS

48 A'Beckett St. MELBOURNE Ph. 663 6151
425 High St. NORTHCOLE Ph. 489 8866
MAIL ORDER HOTLINE (03) 543 7877

*IBM is a registered trademark

SOFTWARE SPECIALS!

CP/Mulator Now you can run your old software on your IBM and speed up your existing software! **only \$99**
8MHz version **\$129**

XC.COM New communications software for **Viatel, Bulletin Boards** and **Teletext**, that doesn't require a baud rate converter! **only \$95**

MICROSOFT MOUSE Latest version, includes PC Paintbrush! **only \$225**

TURBO PROLOG The incredible 5th generation programming language PROLOG. This fully featured implementation will drastically cut program development time and costs. **only \$199**

TWIN Lotus 1-2-3 work-a-like!
• 100% compatible with Lotus 1-2-3
• Uses the same commands as Lotus 1-2-3
• Extra features not found on Lotus 1-2-3
• A fraction of the price of Lotus 1-2-3
..... "Why pay more?" **only \$189**

MICROSOFT WORD Top selling word processor with spelling checker. R.R.P. \$599 **Our price, \$399**

PC ALIEN **only \$95**

C-Tech

1st floor, 48 A'Beckett St. MELBOURNE 3000
Phone (03) 663 6580

Mail Orders Welcome!

*IBM is a registered trademark

A VIEW TOWARDS THE FUTURE

Extraordinarily Powerful Videotex Software For The IBM Personal Computer.

"GateWay is so rich in features that it is difficult to be very critical of the product."

"What makes GateWay so good? First of all it's written largely in 8086 Assembler making it extremely fast and allowing for far superior screen control."

PC Australia, July 1986

We've turned Viatel into a blaze of colours and shapes and created a product from the future — but it's available now!

CyberSoft's GateWay has set the standard for accessing Videotex information on your personal computer.

The others can only follow.

But the standard videotex software is not your standard software. We've packed more power and features into GateWay than anyone else.

Features like Monochrome, Colour, EGA, Hercules and IBM JX screen support. Features like disk capture and offline review, help screens and easy to use menus.

Features like the unique CyberSoft Learn Option. Teach your computer where to find videotex information by accessing the pages once! The next time you want the same pages, they are obtained and stored automatically.

But its biggest feature is that you don't have to be a computer expert to use it. We've taken personal computer communications and made it oh so easy. We've thrown away the jargon and complex commands.

No matter how good the future looks — seeing is believing and \$199 (RRP) buys it at just about every Professional Computer Retailer.

Or a demonstration copy for a refundable \$20.00.

If you are involved in using or providing Videotex information then your business card gets you a complimentary demonstration copy of GateWay.

Please call Heath Rogers on (02) 319 2155 for details about our Corporate Support & Development Project.

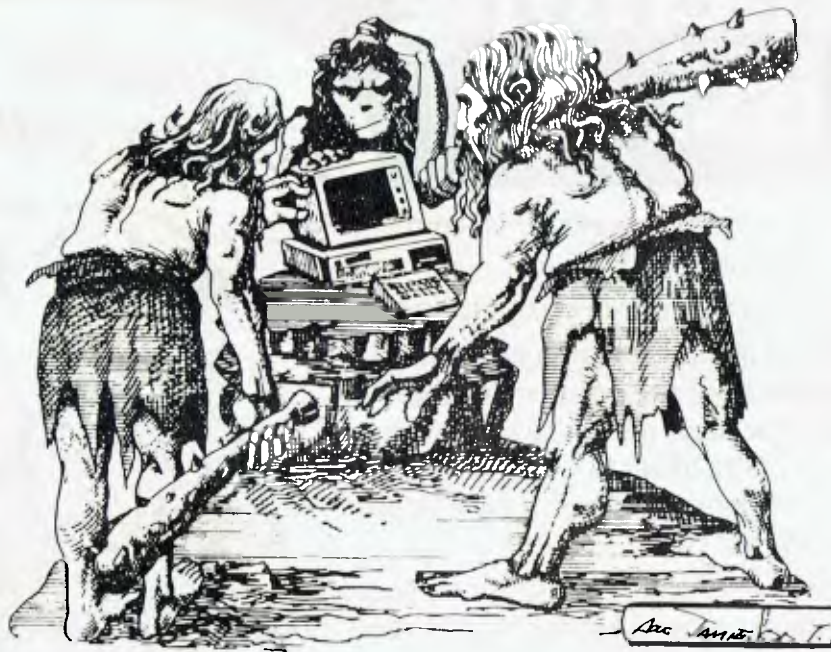
NetComm, Sendata, Telecorp, Visionhire, Resource Card, Queensland Education Dept. and Dick Smith have.

gateway[®]
cybersoft[®]

P.O. BOX 149, HURSTVILLE, NSW,
2220 (02) 319 2155, (02) 57 7631.

*Catch us
if you can*

Spreading the word



The world has come a long way since ideas were first spread by the town crier in the market place. Today there are newspapers and magazines, radio and television and there must be few people who do not have access to all or some

But they are a result of the industrial revolution and modern technology is introducing what is becoming known as the information revolution.

The ordinary person, with little technological skill can use a wide variety of new services and forms of communication. At the front are videotex, teletext and electronic mail.

Videotex utilises three technologies. A central computer stores constantly updated information, the telephone network allows access and modified tv sets, videotex terminals or personal computers display the information.

Since 1978, five videotex systems have been developed:

Prestel; adopted by 26 countries it will

be developed into the CEPT standard.

Telidon; now inserted in a not yet official American standard called NAPLPS.

Teletel; supported by the French government.

Captain; Japan with the specific Japanese characters.

ASCII videotex; plain text with mainly graphics (mainly US).

In 1978, British Telecom introduced the first public videotex service in the world. It appealed to the world of business where it is used principally as an interactive medium for home banking, teleshopping, electronic mail and specific information retrieval.

Separate developments, particularly in the videodisc, videorecording and compact disc areas, are very much connected with progress in the videotex field and it is clear these new concepts will grow into one interdependent system. Satellites and (fibre optic) cable systems will play an important part in this. The user will

need to be guided towards the use of a completely new form of communication and information handling and management. Radical changes in attitude are taking place, and most thorough guidance and examination are vitally important. In the United States commercial organisations are very active in these fields.

Government policy relating to the use of cable and satellite systems will have to be completely changed in the next few years; through this, thousands of new jobs will be created (in program development, production, distribution and related technology). Every form of organisation in society will have to pay attention to the new communication and an integrated policy for electronic communications is essential.

The new electronic communication medium is a perfect Babel so an overview of names and definitions is necessary.

Videotex is the international name for

Chances are when you get your new computer, there'll be something missing.

It can take over six weeks for custom produced stationery to arrive.

So you won't be able to compute on day one.

Rediform instant computer stationery complements all of the popular business accounting packages for micro's, covering everything you're likely to need from "pre-set" invoices, remittance advices and statements to plain print out paper.

Rediform "pre-sets" have space for your company name, address, phone number and other necessary identification so they're particularly suitable for the small computer user. In the interim or long term.

Clip the coupon for further information or your nearest supplier. And remember, don't leave the computer store without Rediform.

Then you can start on day one.

Whaddya mean, no paper?



REDIFORM

Instant Computer Stationery.

☐ Please send me more information on Rediform. ☐ Please let me know where my nearest dealer is.

To: Sales Promotion Manager
Rediform
P.O. Box 180
RICHMOND VIC 3121

NAME _____

COMPANY _____

ADDRESS _____

POST CODE _____

PHONE _____

ANG/RA/841

PC ESSAY

all interactive communication systems, using computers, the telephone network and generating texts and graphics on television sets and monitors. There are public and private systems.

Teletext is the international name of an information system that uses the ether as transport medium. Teletext is added to the normal television signals and is received on normal tv sets with a special decoder. Teletext is a one way system (i.e. not interactive).

Teletex is a new service (sometimes called supertex) for office automation. Word processors, telexes and other office equipment can be interconnected. Videotex and electronic mail services are also possible. The Telecom organisations use their own Datex network for these services and a somewhat limited version operates in Australia under the name Telememo — an electronic messaging service.

Cabletext; The broadband coaxial cable can be used for information transport. It gives faster transmission, has higher capacity, faster frame display and real picture quality.

Cable tv; A very fast growing medium especially in Europe and the US. Most networks are based on coaxial cable technics. In future the fibre optic cable will be used for integrated video, data and voice services. It is possible to build intelligent coaxial cable networks and it is no longer necessary to use modified tv sets. Videotex and other services can be delivered to cable subscribers at very low costs.

Telex; In operation since 1930, this service will be integrated into videotex and teletex networks in the next decade.

Telefax; Telecopying can be used for transmission of photographs, graphics and handwritten documents.

Datex; Data Exchange is a service offered by Telecom organisations for a fast transport of computer information. Special datex-networks are in operation in most Western countries.

Telecom is leading Australia in the new media evolution. A national optical fibre network is under development. Viatel is in operation

and personal computers, terminals and other equipment are distributed by Telecom. Last but not least, Telecom and other OTC are leading parties in satellite developments.

The advantage of a strong Telecom approach is that something is happening. Unfortunately most of the developments are taking place in isolation. There is not much publicity and therefore not much private involvement. Private organisations and lobby groups should take a higher profile. The new media are also going to influence publishing and broadcasting organisations.

No other country in the world has adopted videotex in such a short time as Australia. In 1984/85 three major national systems were launched: Farmlink by Elders IXL for agribusiness and farmers (December 1984); Aftel, the travel industry service (July 1984); Viatel, Australia's public system (February 1985).

Early in 1986 the statistics on these systems were: Farmlink 2500 subscribers, Aftel 800 and Viatel 13,000. It took Prestel, the public service in Britain with a market six times the size of Australia one year to achieve the same number of users as Viatel had within three months. In the same year the number of private systems in Australia grew from less than five to 25. There are now close to 50 private systems in operation.

Videotex is developing as a communication tool for PC's and special software is available for most brands. At least 70 per cent of all Viatel users are PC users. Most of them are in the domestic market and less than 50 per cent of Viatel users are business users. This is close to the US where nearly one million PC users are linked to the so-called ASCII videotex services (The Source, CompuServe and Covidea).

After three to five years, videotex will have been introduced in most business and public organisations in Australia. As soon as these organisations have passed the learning process, there will be a greater demand for systems with higher resolution protocols and other advanced features. ■

Save \$1,150

AND TAKE A FREE

TEST-DRIVE

OF

systematic

FOR MICROS (MS DOS 2.0)



TEST DRIVE OFFER INCLUDES

- FREE ONE DAY WORKSHOP
- 10 DAY TRIAL PERIOD
- \$1150 DISCOUNT

"Offer extended to July 31st, 1986"

SYSTEMATIC is

- ALL AUSTRALIAN
- FOR POWERFUL MULTIPLE FILE APPLICATIONS
- COMPLETE WITH NO PROGRAMMING.

Software Developers, Corporations and Governments are putting aside DBMS tools and 4GL's for power and cost savings with SYSTEMATIC.

Robert Smith review "Australian Computing April 1986".

"A pleasure to work with because it is a complete package".

Dr. Neil Bedingfield — "Myer"

"SYSTEMATIC has made obsolete the programming we used to do with our 4GL. It finished an application in three weeks that we estimated would take three months using the 4GL."

We are pleased. SYSTEMATIC easily returned our investment on the first application".

BRING TO YOUR ORGANISATION

- NO PROGRAMMING
- AUTOMATED SYSTEM DOCUMENTATION
- SPEED & STANDARDS
- POWERFUL APPLICATIONS

SOLD THROUGH IBM
& OLIVETTI DEALERS

or Contact Hazel Isaacs

(03) 877 7600

Interface Management Systems Ltd
43 Railway Road,
Blackburn, Vic. 3130

LEARNING AND USING dBASE III PLUS

SOLVING BUSINESS PROBLEMS WITH d

The New Testament.



n the beginning, there was dBASE II™. When the IBM® PC appeared dBASE II begat dBASE III. Now more than twice as many people use dBASE III as any other database product in Australia.

Here's the new testament. dBASE III PLUS™. Everything that made dBASE III the leader. But easier, faster and more powerful.

The word for beginners.

New pull-down menus let you write advanced applications immediately. And unlike any other database, you'll learn the dBASE language as you go. So the transition from beginner to advanced user is painless and efficient. Totally new documentation and on-screen step-by-step help make learning easy. The Advanced Query System makes getting answers as simple as asking the questions.

The word for experts.

50 new commands, powerful error-trapping, a data catalogue, assembly language calls, inbuilt networking and speed increases of up to 10 times cut down programming time and extend dBASE's problem solving ability. And it's completely compatible with existing dBASE III files. If you liked dBASE III, you'll worship dBASE III PLUS.

Get the new testament working for you.

No matter what your data management problem, dBASE III PLUS is the easiest, fastest, most powerful solution. Your Ashton-Tate dealer has dBASE III PLUS now. Call in for a demonstration or call us for the name of your nearest dealer.

dBASE III PLUS

80 Berry Street, North Sydney 2060. Phone (02) 959 4611



ASHTON-TATE

New products

Taking security overseas

In the latest round of the fight against unauthorised hacking the Nederlandse Middenstand Bank of Holland has placed a \$1 million order with Eracom Pty Ltd for its PC encryptor.

The sale of 1000 of the security sub-systems represents a significant development for the Queensland company in its export drive to Europe.

The units will be used to provide cryptographic protection for PCs used by the bank within its overall banking system and distributed network. The specifications were prepared by Eracom, IBM and the Dutch bank.

The PC Encryptor Board provides security for the operating system program and data files on floppy or hard disk drives. It works on IBM PCs and compatibles and can be upgraded to add communications and key management capabilities. Individual encryption keys can be provided to a single system or group of systems by a hardware key facility.

The board uses the Data Encryption Standard algorithm and is compatible with PC-DOS and MS-DOS operating systems. It comes in an anti-static bag with a user manual and software on 5¼ inch disk to suit the hardware configuration.

It will encrypt/decipher all data written to or read from floppy disks or hard disks (IBM style with ROM). All disk transfers are performed using existing DMA channels and if insufficient channels are available a switch option allows automatic selection of direct I/O to the cipher processor. This option must be exercised when the board is installed.

The board's communications option provides two channels;



Weapons in the battle against unauthorised hacking

one synchronous/asynchronous modem channel capable of operation at speeds up to 9600 baud, and terminated in a full V24/V28/RS-232C specification 25-pin connector and one asynchronous channel up to 9600 baud terminating in a 9-pin D connector.

PC Encryptor

*Eracom Pty Ltd
26 Greg Chappell Drive
Burleigh Heads, Qld 4220
(075) 56 0911*

Packaging design goes international

An agreement giving Datrek Computer the international marketing rights to Australian Paper Manufacturers Correx Easi-Pack packaging design system is expected to lead to large export earnings for the two companies.

The Easi-Pack system had been used extensively by APM and its associated companies.

Datrek, a major distributor for Texas Instruments, encour-

aged the company to bring the product across to the new generation of PCs. The system will be marketed initially on the Texas Instruments PC and Business Pro, together with Roland DXY plotters. System price will range between \$20,000 to \$30,000 depending on the configuration.

*Datrek Computer P/L
Suite 5
10 Hoddle Street
Abbotsford Vic 3067
(03) 419 0866*

NEW PRODUCTS

Tape drive support for hard disks

Megafile Q60 is designed to overcome the necessity of providing an individual tape drive for each hard disk equipped IBM PC XT or AT. It stores up to 60M on the industry-standard 600ft quarter inch tape cartridge. Back-up or restore may be either mirror or by designated file under the control of Pulse TBS a comprehensive and easy-to-use tape management utility which is supplied with the Q60.

It is connected to the computer via a cable plugged into a controller board. By using the Q60 to back-up the Western Digital Filecard (hard disks on a card) current PC installations can be fully upgraded without throwing away existing drives or carrying out physical alterations.

Megafile Q60 has its own internal power supply to reduce the impact of power supply overheads in the host computer.

Megafile Q60

Daneva Australia Pty. Limited
64-66 Bay Road
Sandringham, Vic 3191
(03) 598 5622.

Three low-cost boards

Hypertec has introduced three new low cost short boards. They are Hyper-512 MF, a multi-function board, Hyper-512, a memory expansion board and Hyper-port, which provides a parallel and a serial port.

The major product is Hyper-512 MF, which has a standard 512K of memory fully populated, a parallel port, serial port and clock/calendar, all on a short board. It comes with software for print spooling, RAM disk and disk caching.

A company spokesman says it is ideal for users who wish to substantially boost the memory and features of their PC, to extend its life with far more power and flexibility.

The Hyper-512 expands memory by 384K to a fully-populated 512K. Software in-



Megafile Q60: stores up to 60M on industry standard 600 ft 1/4 inch tape cartridge

cludes print spooling, RAM disk and disk caching. There is an optional 128K RAM disk outside the system memory.

Hyper-port provides parallel and serial ports, a clock/calendar and print spooling. All the boards are supplied with a full manual

with installation explained step by step on floppy disk.

Hyper-512 MF \$685

Hyper-512 \$450

Hyper-port \$395

Hypertec

(02) 819 7222



Multilink Advanced and Lanlink

Multilink advanced version 3.03 enables companies to connect up to eight dumb terminals to a single computer in a multi-user, multi-tasking environment that runs under PC DOS. Some of the key features of this upgrade include: support for PC DOS 3.1, the potential to use memory boards that expand memory above 640K, and 8087/80287 co-processor support.

The new version of Lanlink supports IBM PC DOS 3.1 and solves PC-to-PC communications with data sharing, using the PC's standard RS232 serial ports. Lanlink allows the user to set up a "star" central file micro (the Server), or daisy-chain micros together. With the Lanlink server program, resources, such as printers, can be specified for each satellite.

Multilink Advanced \$798

Software Product Support
PO Box 229
Chatswood NSW 2067
(02) 419 5879

SNS Group releases PCtos-Net

The SNS Group has released PCtos-Net which allows an IBM PC, PC/XT or compatible PC to act as an N-Gen workstation. Developed in the US by Modular Data Systems Inc, PCtos-Net is designed to enable a PC to act as a workstation on any N-Gen, B25 or MDS Hero cluster. Machines can be hard-wired through the RS232 ports, or can be remotely connected via modem. The PCtos-Net software runs on a host cluster as a server and makes the PC or compatible appear as a cluster workstation. The software has file transfer capability.

PCtos-Net \$995

The SNS Group
2-3 The Postern
Castlecrag NSW 2068
(02) 958 2399



Is there a better Wordprocessor than the DIGITAL DECmate?

A: THERE IS NOW

Just released for the IBM PC and compatibles, **WPS-PC** delivers power and facilities you could previously only get by buying DIGITAL's DECmate wordprocessor. With WPS-PC you get the dedicated advantage without the heavy price tag.

WPS-PC completely remaps the keyboard to the superb dedicated layout and functions of the DECmate. DECmate users will be at home right away. WPS-PC is also *faster* than the DECmate.

How is WPS-PC so much better?

Is there really such a big difference between other "IBM compatible" wordprocessors and WPS-PC? There certainly is, in ways that put WPS-PC miles ahead in productivity in the office.

1. WPS-PC is amazingly easy to learn so you and your staff will be productive sooner. Its famous Gold-Key system of commands are both *logical* and *mnemonic*. People quite unfamiliar with computer equipment quickly grasp this approach.

2. Commands can be executed with greater speed and fewer keystrokes with WPS-PC. There are no complex control sequences to learn. Even an occasional user will find it easy to drive. On screen bolding, underlining and simple "cut and paste" functions make editing fast and simple.

3. WPS-PC is a complete system. An excellent spelling checker, sophisticated list processing, communications and file translation facilities, all integrated in one package. For DECmate users, WPS-PC has two way file transfer with their old system.

4. WPS-PC puts the user at ease. All menus and help instructions are in *plain English*. Contrast this with the often incomprehensible and cryptic messages of other wordprocessors.

5. WPS-PC is better designed for storing and editing documents.

* Document names are stored in a *properly indexed* directory (which may be printed out or viewed while you are editing documents). A *full description* may be included in this index. Most wordprocessors only allow crude 8 letter names, no index and no facility for description.

* WPS-PC stores all the formatting instructions for each document *with the document*. Other wordprocessors require the operator to reload formats every time the document is edited.

* WPS-PC can drive a wide range of printers (including the latest Laser types), both draft and letter quality.

* Full background printing is provided. Many wordprocessors keep you waiting while your computer is printing. With WPS-PC you're working on the next job.

6. WPS-PC is a fully supported system. Not just with telephone help, but with the highest standards of individualised training in Australia.

And it isn't expensive. We can provide just the software, or a complete WPS-PC system. Call now for prices. You'll be pleasantly surprised.

LOGO

LOGO Computer Centre,
Suite 303, Henry Lawson Business
Centre, Birkenhead Point, PO Box 389
Drummoyne 2047. Phone (02) 819 6811

Interstate dealer enquiries invited.

Floppy support for hard disk

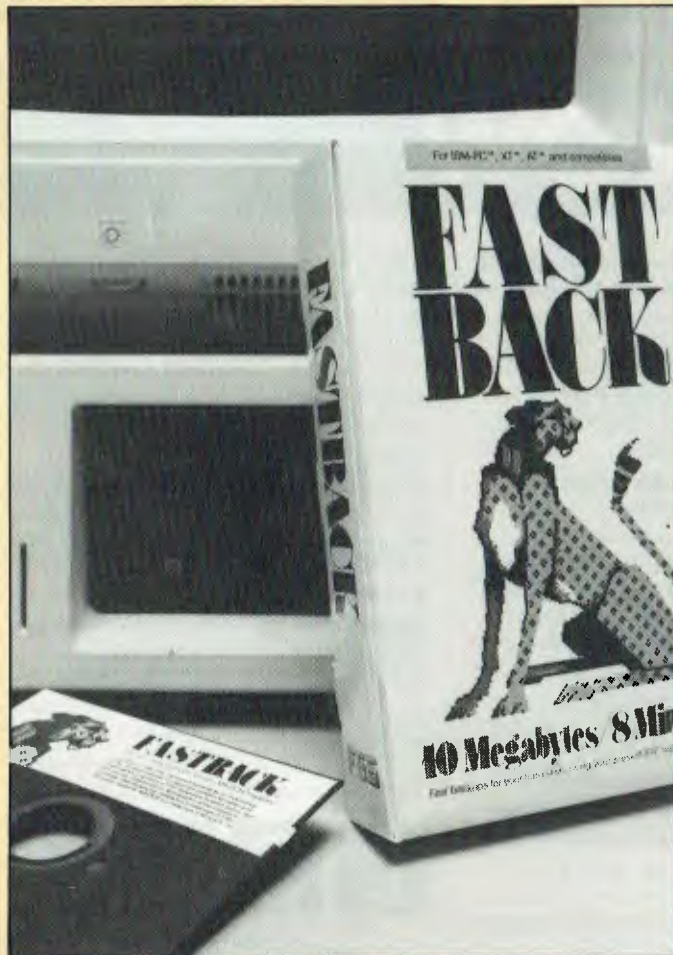
Fastback, a comprehensive hard disk back-up and restore utility for IBM XT/AT developed by Fifth Generation Systems, has undergone some significant refinements since its release in August last year. As well as an improved user interface, Fastback V.5.03 features a no-stop error correction facility and a DMA channel 8273 diagnostics routine, to identify and compensate, for problems which have plagued many PCs and clones.

In its optimal mode on an XT with two floppy-disk drives Fastback can back-up its 10M hard disk in around eight minutes. On an AT with 1.2M floppies Fastback can lay down 20M of data in eight minutes.

The user can specify an individual subdirectory, a file description using wildcards or a back-up of only those files which have changes since the last back-up. As the back-up or restore proceeds the user is prompted to keep the floppy-disk up to the system. The utility keeps track of disk sequences and dates as well as providing a complete statistical summary of the operation when the back-up is complete. This includes the time required for the back-up, the number of disks needed, the number of files backed-up and the disk space occupied.

Fastback V.5.03

Daneva Australia Pty. Ltd.
64-66 Bay Road
Sandringham, Vic 3191
(03) 598 5622



Fastback V.5.03: undergone significant refinements since its release last August

New data spooler

The Ectron Model 264 Data Spooler enables computer users to transfer print data from the computer to the spooler's memory. This means the system is free to perform other functions. The 64K buffer can take up to 30 pages of text or a large plot file.

Ectron says the spooler has a Copy function which enables users to obtain multiple printouts of the same text without using

the computer. The unit has also a built-in self test feature to verify proper operation. All the controls like Clear, Copy, and Pause are on the front panel.

Ectron Model 264 Data Spooler

Ectron-EAI
P.O. Box 257
Doncaster Vic 3108
(03) 848 8188
(02) 427 3322



Ectron Model 264: takes up to 30 pages of text and has a built-in self test feature

Wider range for MD110

Ericsson has extended the range of user support systems for the MD110 telephone system. The package, called PCMAS, has been designed as a menu-driven command handling system with particular use for the MD110 Compact which offers up to approximately 300 extensions. PCMAS enables the system manager to perform "user moves and changes" within the MD110 in a user friendly manner.

It is aimed at the average end-user and can be used without detailed knowledge of the operation and maintenance procedures within the MD110. The system will come with complete installations documentation to allow user installation of the package.

PCMAS runs on an IBM PC or compatible and the required configuration is 256K RAM, two synchronous interface and 80 column printer. The PC may be

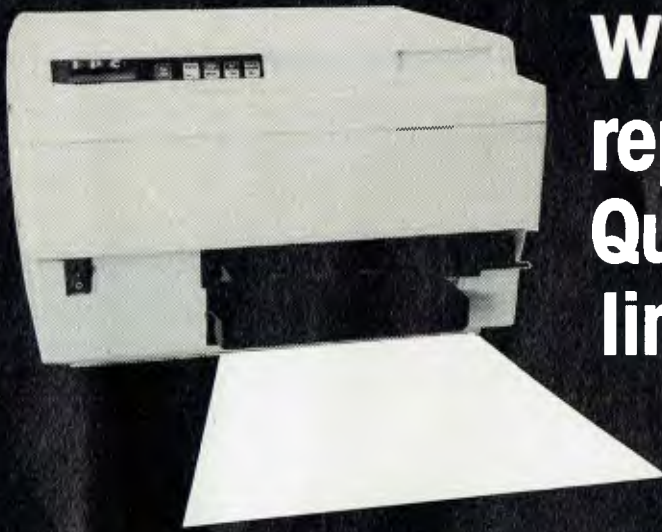
connected on-site or remotely via a modem. The software runs in MS-DOS, version 2.11 or above.

Telecom has recently approved access for MD110 users to a wide range of commands used for re-configuration of user facilities in the MD110. PCMAS gives the user a simple way of using commands to change extension categories, re-locate an extension number, initiate a new extension, change call diversion and night switching paths, define call pick-up groups, set up hot-line connections and define alternate routing patterns.

The program also allows the user to go into a "transparent mode" that gives direct entry of man-machine level commands into the MD110.

PCMAS

Ericsson
61 Riggall St.
Broadmeadows Vic 3047
(03) 309 2244



Which printer can silently replace all your Epsoms, Qumes, Diablos, NECs, lineprinters & LQP-02s & works ten times faster?

When you need the highest
standard of presentation, the highest
speed and the lowest noise levels, there
is one *very special* laser printer you have to see:

The Impact Laser 800

The Impact works perfectly with
your *existing* software and even your
dedicated wordprocessor. Our printer
does this by *emulating* practically
every industry standard printer. So
there is no need to reconfigure
software. It works with the Impact just
the way it is.

Whether you need to print out a
spreadsheet with Lotus, configured
for an Epson FX100 or a document
from WordStar configured for a Diablo
630 or from WPS-PC for the HP
LaserJet, the Impact can do it. At
around 10 times the speed, to typeset
quality, in complete silence.

*Emulation modes are easily selected either via
front panel switches or software commands.*

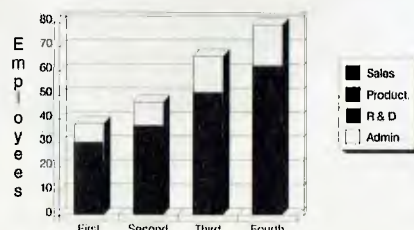


The Impact will *save you money*. An acoustic hood is
unnecessary. The sheet feeder is built
in. And you'll never need a forms
tractor or continuous stationary
because the Impact can print the form
(complete with your logo) *as it prints
the text*.

Working 10 times faster than
letter quality printers, one Impact
replaces several of them, saving office
space. And of course, one Impact is
cheaper to buy and maintain than
printers it replaces. The toner
cartridge for the Impact works out
about half the price per page
compared to ribbons.

The Laser 800 has *more
typesyles built in* and they are easy
to use. The base model comes with
four character sets; a further eight
sets are available and may be "on
line" at the same time.

Optional font cartridges further
extend the range. *Very simple
commands* are all that is needed to
use these character sets with your
existing software.



*Text and graphics can be mixed to swiftly produce
presentation quality reports on paper or film.*

Using the "flexi-font" capability,
the Impact transforms existing fonts
into thousands of new permutations.

The Impact can generate a wide
variety of output *to your specific
requirements*. This includes shading
patterns, forms generation, logos and
photographs, *even your signature!*

The Impact is *fully field
upgradable* and is serviced
Australia-wide by Honeywell.

Start with a basic machine.
Expand to a fully optioned machine
with 50 fonts on line, 2MB of memory
and a multibin sheetfeeder.

You'll have to see it to believe it,
so call us now for a demonstration.



LOGO Computer Centre,
Suite 303, Henry Lawson Business
Centre, Birkenhead Point. PO Box 389
Drummoyne 2047. Phone (02) 819 6811

Master Distributor.
Dealer enquiries invited.



NEW PRODUCTS

Small price for laptop IBM

A powerful IBM compatible lapsed PC selling for less than \$2000 has been released in Australia by Pulsar Electronics Pty Ltd. The Pulsar Model 8 is small enough to fit into a briefcase, weighs only 4.5kg, yet has the full power and storage of most desk top computers.

It is based on the CMOS 80C88 microprocessor running at 4.77 MHz and has 512K of RAM. It is powered by a built-in rechargeable battery or through an external AC to DC adaptor. Bundled software is MS-DOS 2.11 and GW-BASIC 2.0. A second disk drive output allows the user to interface with an external 3½-inch microfloppy or 5¼-inch minifloppy disk drive which provides a convenient way to upload or download IBM compatible software.

Printer connection is via a Centronics parallel interface and there is a RS232C serial output with fully programmable CTS, RTS, DSR, DTR and RI modem functions. The low profile keyboard has 76 full-stroke keys, including 10 programmable function keys and four cursor control and screen editing keys. The screen is a pop-up, high contrast backlit LCD with EL back light. Graphics resolution is 640 x 200 pixels and the effective viewing area is 230mm x 76mm. The viewing angle can be adjusted and there is a standard RCA jack.

The Pulsar Model 8 laptop comes with carry case and operator's manual. Optional peripherals and accessories include: external 3½ inch microfloppy disk drive; 5¼ inch minifloppy disk drive and cable; RS232C serial communication cable; parallel printer cable; external monitor and cable; and V21, V22, V23 Telecom approved Hayes compatible smart modem.

Pulsar Model 8 \$1990

*Pulsar Electronics Pty Ltd
Catalina Drive, Tullamarine,
Vic 3043 (03) 330 2555*



IBM's Pulsar Model 8: small enough to fit into a briefcase, powerful enough to rival a desktop PC.

Low-cost business printers

Genesis Systems has released the Star Micronics NX-10 dot-matrix printer featuring a 120 cps draft printing speed and a 30 cps near letter-quality speed. The nine-wire print head handles eight character sizes, ranging from 40 to 130 characters a line as well as block, graphic and italic characters.

All its controls are on the front panel. With a touch of a pressure pad button on the control panel, a user selects the typeface and print pitch, or selects between draft and near letter-quality modes. There is a friction and tractor feed, a 5K print buffer and ribbon cassette. The NX-10 also features forward and reverse paper feed, a 25 cm carriage, Hex dump, and self-

diagnostics. An automatic cut sheet feeder is optional.

Genesis has also released the Star Micronics NB-15 dot-matrix printer which offers 300 cps draft printing speed and 100 cps letter-quality speed, through a 24-wire print head.

The NB-15 is compatible with the IBM PC, and can emulate other printer standards. It offers a choice of typefaces through the use of removable typeface cartridges. Up to three different typefaces are accessible through the front panel or software control. A tractor feed, adjustable for various paper widths, is standard, as is automatic single sheet feed. There is also a 38 cm carriage, expandable 16K print buffer and ribbon cassette. A single cut-sheet feeder with one or two bins is optional.

Star Micronics NX-10 \$599

*Genesis Systems
26 Norton St.
Leichhardt NSW 2040
(02) 550 0530*



KAYPRO VS THE REST!



The new Kaypro Professional Computer offers unbeatable value for your dollar. Its quality U.S. manufacture and modular design are an added bonus. Just add up the figures. We think you'll find the bottom line very convincing.

Price this lot from the competition:

Personal computer with 8088 CPU, (8087 optional), 256K RAM and dual floppies	\$
Serial/parallel ports	\$
Video board (TTL, colour, composite)	\$
Amber graphics monitor	\$
Real time clock/calendar	\$
MS-DOS V2.11	\$
GW-BASIC	\$
WordStar with Mailmerge	\$
Spelling checker and Starindex	\$
MS-DOS programmers' manual	\$
MITE communications, RAM disk software and Polywindows desk	\$
Total cost (floppy system)	\$
PLUS: 20 Megabyte system, 512K memory (total 768K)	\$

By comparison, our KAYPRO PC with all these inclusions costs **just \$2,545***. The KAYPRO PC20 with 20 megabyte hard disk and 768K of memory costs **only \$3,740***.

And the Kaypro has a lot of other things going for it:

☐ The Kaypro is fitted with the new IBM AT style keyboard, with a *far superior key layout* and *security keylock*.

☐ The Kaypro is a *completely modular* PC. All circuitry is on plug in cards. With 9 slots in total, and only 3 occupied in a normal system, you have massive expansion potential.

☐ Because the microprocessor is on a plug-in card, the KAYPRO is *fully upgradable* to IBM AT specifications, just by fitting another card. No need to trade in your obsolete computer.

☐ When you buy from LOGO, you get a *fully supported* PC. We can support you with personalised training courses in both Introduction to Personal Computing and WordStar. Or enquire about our interactive training software. Either way, we'll have you off and running in no time.

What are you waiting for, call us now to arrange a demonstration.

LOGO

Suite 303, Henry Lawson Business Centre,
Birkenhead Point. PO Box 389 Drummoyne 2047.
Phone (02) 819 6811

*All prices include tax. Government prices even lower.

Prices so low they'll take you down memory lane!



Hypertec Pty Ltd is proud to offer IBM PC (and true compatibles) users a range of **memory expansion** and **multifunction boards** at prices that will have you coming back for more!

THIS IS OUR REPUTATION

- These boards are designed to substantially increase the power, flexibility and range of uses of IBM PCs and true compatibles. They stretch your invested dollar a lot further.
- At last, a range of Australian designed and built boards — not imports.
- Being Australian products means that local support is available to both dealers and users — from the company which designed and built the boards.
- Highest quality — backed by full 12 months warranty from Hypertec.
- All this available at outstanding prices.

Now let the facts speak for themselves.

HYPER-256: \$195 (\$220 for IBM 3270 PC)

A short board designed specifically for the IBM PC range and true compatibles with 256K of memory for the incredibly low price of only \$195.

HYPER-256 is ideal for expanding the memory of new system units, to give a dealer that extra competitive edge with his PC product.

HYPER-256 is the perfect solution for cost conscious PC users who need more memory for spreadsheet, database, word processing and other applications, where memory restrictions prevent the software from being used to its full potential.

HYPER-512: \$450

HYPER-512 short board is the answer for PC users who wish to increase system memory by 384K to 512K. No longer need you be restricted by insufficient memory for your particular application. At this price you can't afford not to upgrade memory.

HYPER-512 MF: \$685

HYPER-512 MF is a short multifunction board with 512K of memory as standard, parallel port, serial port and clock/calendar. The board comes with a full range of software for print spooling, disk caching and RAM disks.

This is truly an amazing offer! A high quality, Australian designed and built multifunction board, fully populated with 512K of memory and a host of other features — all for well under \$700.

HYPER-512 is the perfect answer to build up a new PC systems unit with expanded memory, ports, clock and a full complement of systems software.

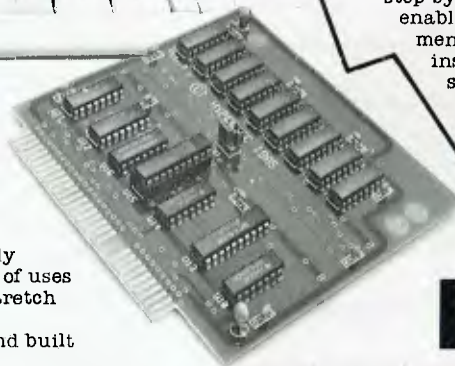
It is also ideal for users who wish to substantially boost the memory and features of their PC, to extend its life with far more power and flexibility.

HYPER-PORT: \$395

For those who want a modem, mouse or extra printer — but don't have the port for it — HYPER-PORT is the answer. HYPER-PORT is a short board, featuring a parallel port, serial port and clock/calendar. Print spooling software comes standard. Now there is no need to buy an expensive multifunction card simply to get extra ports or the ability to automatically date and time stamp files.

YOUR HYPER-BOARDS ARE SIMPLY A PHONE CALL AWAY

- All boards (except HYPER-256) come complete with full manual.
- All boards (except HYPER-256) come with simple step by step install procedures on a floppy disk to enable a user to install the board. It uses menus, diagrams and plain English to make installation a breeze. And if you are still not sure, simply ring HYPERTEC or your dealer.
- All prices are recommended retail prices including sales tax. Quantity discounts are available.
- Dealer enquiries are welcome.



HYPERTEC



Hypertec Pty. Ltd.,
Suite 404, Henry Lawson Business Centre,
Birkenhead Point, Drummoyne, N.S.W. 2047.
Telephone: (02) 819 7222. Telex: 177440

TO: HYPERTEC Pty. Ltd., P.O. Box 385,
Drummoyne, N.S.W. 2047.

Please send me more information on the boards indicated.

- | | |
|------------------------------------|---------------------------------------|
| <input type="checkbox"/> HYPER-256 | <input type="checkbox"/> HYPER-512 MF |
| <input type="checkbox"/> HYPER-512 | <input type="checkbox"/> HYPER-PORT |

NAME:

POSITION:

COMPANY:

ADDRESS:

PHONE:

PCA

Colorful responses



User-to-User invites submissions from PC Australia readers. If you have any hints, tips or patches which you would like to pass on to other PC users, send them in to the following address, and the lucky authors of items published will receive a complimentary box of diskettes.

*User-to-User
C/O PC Australia
GPO Box 55A
Melbourne Vic, 3001.*

Color your prompt

If you have a hard disk which contains many sub-directories, the following changes will allow you to know at any time which one you are currently using. It will also allow you to change the color of your prompt and screen output. In the example given the prompt is yellow and the screen output is green. (See the DOS technical reference manual for more information on colors.)

It is assumed that you know how to use the line editor EDLIN, which is contained on your DOS disk. (A section on EDLIN appears in the DOS manual.) It is also assumed that the files to be changed already reside on your DOS disk. If they do not then EDLIN will create them regardless.

Using EDLIN, open your AUTOEXEC.BAT file and insert the line:

```
PROMPT $e[1;33m$p$e[1;33m
$g$e[0;32m
```

If you have print spoolers, ramdisks and so on, it is recommended that this line be inserted after their activation as shown in the boot-up file in Listing 1.

Again using EDLIN, open your CONFIG.SYS file and insert the line **DEVICE=ANSI.SYS** anywhere in the file, as follows;

```
DEVICE=ANSI.SYS
BUFFERS=20
COUNTRY=61
```

Re-booting should now give you a prompt like this; A:\>

Changing the directory, by using the command CD\DBASE, for example, should result in the following prompt, A:\DBASE >

Steve Jordan
Sydney, NSW

If you have a hard disk unit you should at least be using the 'PROMPT \$p\$g' command in your AUTOEXEC file. This does not require ANSI.SYS and also displays

```
ECHO OFF
ASTCLOCK
ECHO.
RAMCLEAR
ECHO.
MODE LPT1:
ECHO.
SUPERSPL LPT1:
ECHO.
PROMPT $e[1;33m$p$e[1;33m $g$e[0;32m
VER
PAUSE
CLS
```

Listing 1: AUTOEXEC.BAT file containing the change.

the current directory path. Jordan's PROMPT command however does require the ANSI.SYS file to be loaded, but it does look pretty on a color monitor.

The PROMPT command can also be used to display the date and time. For example try PROMPT \$p \$b\$d\$b\$1\$h\$h\$h\$h\$h\$g. Colors are modified by the use of standard ANSI escape sequences \$e[33m and \$e[32m for yellow and green respectively. If you prefer other colors try a combination from Figure one. Or, if you have a monochrome

Color	Foreground	Background
Black	\$e[30m	\$e[40m
Red	\$e[31m	\$e[41m
Green	\$e[32m	\$e[42m
Yellow	\$e[33m	\$e[43m
Blue	\$e[34m	\$e[44m
Magenta	\$e[35m	\$e[45m
Cyan	\$e[36m	\$e[46m
White	\$e[37m	\$e[47m

Figure 1

Attribute	Escape Sequence
Bold	\$e[1m
Underscore (mono only)	\$e[4m
Blinking	\$e[5m
Inverse Video	\$e[7m
Attributes off	\$e[0m

Figure 2.

monitor, try Figure two.

If you want to combine attributes you can separate them with a semicolon. For example, to set bold on and set the foreground color to yellow and then display the prompt information, enter this simple sequence:

```
PROMPT $e[1;33m$p$g
```

Alternatively, to set the foreground color to green, background to white and then display the path information, try:

```
PROMPT $e[32;47m$p$g
```

dBase yet again

While working on a dBase III project I needed to display a numeric value without leading spaces. Instead of converting the numeric to a string and using a loop to strip off the leading blanks I used the following formulae:

```
? str( NUM, 1 + INT( LOG(NUM) / LOG(10) )
```

where NUM represents the numeric variable to be displayed, and the expression $1 + \text{INT}(\text{LOG}(\text{NUM}) / \text{LOG}(10))$ gives the number of digits to the left of the decimal point, as shown in Listing 3. I hope others will find this of some use.

Jessica Gordon

Certainly this formulae is better than using a DO WHILE loop. If,

```
* LTRIM.PRG 14/05/86 Ron Pollak & Co
* Example of the dBase routine to left justify numerics
input "Enter a number!" to LNUM
? "You entered;" + str ( LNUM, 1 + int ( log (LNUM) / log (10) )
return
```

Listing 3: dBase left-justification routine.

however, you have got dBase III Plus you could use the new LTRIM() function. For example; ? LTRIM(STR(NUM, 8)) will achieve the same result providing the NUM variable is no longer than eight decimal digits.

Pipes are calling

If you want to remove the necessity of responding with keyboard input to certain DOS commands you can use the pipe feature of DOS. You may want to do this where you are using a batch file that, among other things, formats a new disk.

Do this by first creating a text file of the required input stream using COPY CON:. For example to answer the prompts to the command "FORMAT /V" type the following:

```
COPY CON: INPUT.TXT
```

```
MYDISK
N
<F6><Enter>
```

The first blank line here is the response to the 'Press the ENTER key to continue' message, the second line responds to the 'Enter volume label' message and the third line responds to the 'Format another disk? (Y/N)' message. The COPY CON: command is terminated by pressing the F6 function key followed by the Enter key. To run this automatic format enter the command:

```
TYPE INPUT.TXT: FORMAT B: / V
Caroline Babbage
```

*This is a clever and easy way to fully automate batch files. (It can also be used to remove the necessary response to an ERASE *.* command. See PC Australia, May, P.77 for*

Selective deletions

While copying files from a floppy disk to the hard disk I inadvertently copied all the files to the root directory. I wanted an easy and effective way to remove them and I achieved this by placing my disk in drive A: changing the default drives to drive A: then using with the command:

```
FOR %F IN (*.*) DO DEL C: %F
```

This command will delete all files from the root directory that also exist on the disk in drive A:.

Sandy Cameron

This is a quick and easy way out of a minor dilemma. You could spend hours deleting each file individually, but just remember to check that the floppy disk does not contain anything important — such as COMMAND.COM!

WordStar patches

When working with WordStar you might like to have the extra convenience of using the DEBUG.COM to create these patches, but be warned — it is best to copy your WS.COM file before patching it! Be sure to write your file after you have customised it.

To control the length of time that messages remains on the screen you can choose from different delay times.

FOR A SHORT DELAY

```
Address : 2CF
Change : FROM 1 TO 0
DEBUG : -F 2CF L1 0
```

FOR A MEDIUM DELAY

```
Address : 2D0
Change : FROM 10 TO 14
DEBUG : -F 2D0 L1 0
```

FOR A LONG DELAY

```
Address : 2D1
Change : FROM 8 TO 0
DEBUG : -F 2D1 L1 0
```

FOR A LONGER DELAY

```
Address : 2D2
Change : FROM 10 TO 14
DEBUG : -F 2D2 L1 14
```


PURSUIT

COMPUTER SYSTEMS

TAKE ADVANTAGE OF OUR INTRODUCTORY PRICES AND SAVE A BUNDLE!!

* IBM is a registered trademark of International Business Machines

COMPUTERS

IBM * COMPATIBLES FROM \$999
SYSTEMS TAILORED TO YOUR
INDIVIDUAL NEEDS!

MONITORS

— 12" Composite Mono	\$ 179
— TTL Monochrome	\$ 249
— RGB Color	\$ 485
— TAXAN Monitors	\$ CALL

PRINTERS

— Brother M-1109 80 col.	\$ 389
— Brother M-1509 132 col.	\$ 759
— Others in range	\$ CALL
— EPSON Printers	\$ CALL
— CANON Printers	\$ CALL
— OLYMPIA Printers	\$ CALL

DRIVES

— 360K DD 5.25" Floppy	\$ 199
— 20 Mbyte Hard Disk	\$ 999
— 30 Mbyte Hard Disk	\$ CALL

ADD-ONS

— Parallel Printer Card	\$ 59
— Asynch RS-232 Card	\$ 70
— Color graphics Card	\$ 135
— Monographics Card	\$ 165
— 384k/OK Multifunction	\$ 199
— Multi I/O Card	\$ 189
— Floppy Controller Card	\$ 79

OTHER

— PLOTTERS	\$ CALL
— DIGITISERS	\$ CALL
— MOUSE & Software	\$ 159
— JOYSTICK	\$ 39
— Disk Storage box	\$ 19
— DSDD Diskettes 5.25"	\$ 19
— Printer Cables	\$ 19

DEALER ENQUIRIES WELCOME

All prices include sales tax and are subject to change without notice.

GRAND OPENING!

BONDWELL MODEL 8 LAPTOP



ONLY
\$1890

Features include:

- Fully IBM * PC Compatible
- 512 k RAM
- 720 k 3.5" Floppy Drive
- VDU, PRINTER, COMMS & EXTERNAL DRIVE PORTS
- Rechargeable Battery Powered & AC to DC Power Adapter
- Backlit LCD 80x25 DISPLAY
- MS-DOS 2.11, GW BASIC
- BUNDLED SOFTWARE
- PLUS MORE....

ST. KILDA EXECUTIVE CENTRE
LEVEL 7, 608 ST. KILDA ROAD MELBOURNE, VIC. 3004

PHONE: (03) 51-2353

WE'VE GOT EGG ON OUR FACE

INFORMATION
BUSINESS
MANAGER

There is no denying our embarrassment. We have been so busy satisfying the demands created by the installation of over 4000 of our Business Manager Packages, that we omitted to notify our customers regarding the latest developments and updates. If you would like the latest updates and information on enhancements, please fill out the form. We will send you a FREE demonstration disk* of the latest BM software.

* To suit IBM PCs and look-alikes

NAME _____

COMPANY _____

ADDRESS _____

Postcode _____

Tel: _____

Computer _____ Op. system _____

Tailor made software available

Information Unlimited

The name says it all
2 Prospect Hill Road, Camberwell 3124.
Tel: (03) 813 3022 Sextant 108

PIXELS SOFTWARE

*PC software developers
— quality software
custom built to your
special requirements.

* Australian Distributor
for

PERSONAL PEARL

- powerful database
- menu driven
- low cost — \$495 r.r.p.

(dealer enquiries welcome)

134 Mills St,

Albert Park,

Vic. 3206

(03) 690 7016

THE PC AUSTRALIA COLLECTION

Back issues of PC Australia are selling fast, so if you have any gaps in your collection, now is the time to order!

Back issues are \$4.00 each, including postage.



OCTOBER '85



NOVEMBER '85



DECEMBER '85



JANUARY '86



FEBRUARY '86



MARCH '86



APRIL '86



MAY '86




JUNE '86

INDEX TO ADVERTISERS

1 Alloy Australia	57, 55
2 Arcom Pacific	27
3 Ashton Tate	62
4 ATS Computing	76
5 Australian Entre Business Centres	24
6 BRW	51
7 Commercial & Professional Microsystems	4
8 Commonwealth Bank	52
9 Computer Print & Paper Co	34
10 C-Tech	57
11 Cybersoft	58
12 Daneva Aust P/L	5
13 Database Network	86
14 Datacraft	14
15 Datasat	36
16 Discware	8 & 9
17 Down Under Software	78
18 Hercules Computer Technology	17, 21
19 Hypertec	70
20 Imagineering	33, 35, 37
21 Impact Systems	2 & 3
22 Information Unlimited	73
23 Interface Management	61
24 JME Computer Systems	86
25 Logo Computers	65, 67, 69
26 MacDesign	49
27 MCP Applications	91
28 Micromania	82
29 Moore Paragon	60
30 N.C.R.	10
31 NetComm	80
32 PC Australia	74, 75, 89
33 PC Extras	79
34 Pursuit Computer Systems	73
35 Pixels Software	73
36 Qubie	42
37 Rodsoft	55
38 Sendata	51
39 Software Source	47
40 Specialised PC Systems	32
41 Squirrel	92
42 Stylus	16
43 Telecom Australia	31
44 Telecomputing	38 & 39
45 The Computer House	88
46 The Computer Supply Store	18 & 23
47 The Computer Trader	45
48 Viatel Computers	46
49 Vizden Corp.	13

Kaypro PC ad which appeared in June 1986, should read, prices do not include monitor.



Tick issues required

Send to: PC Australia, Freepost No. 80A,
GPO Box 55A Melbourne Vic. 3001

Enclose

☐ Cheque made out to PC Australia

☐ American Express ☐ Bankcard ☐ Diners Club

Expiry Date ____ / ____ / ____ Signature: _____

Name: _____

Address: _____

Card No: _____

☐ OCT
 ☐ NOV
 ☐ DEC
 ☐ FEB
 ☐ MAR
 ☐ APR
 ☐ JUN

PC Disk No. 3 is here!

Are you one of the hundreds of enlightened PC Australia readers who have requested PC DISK No. 1 or PC DISK No. 2? If so, you will be happy to know that PC DISK No. 3 has now arrived! If not, why not take this opportunity to order the complete set of three PC Listing Disks?

PC DISK No. 1 contains all of the program listings and subroutines described in the first three issues of PC Australia, from October to December 1985. PC DISK No. 2 contains all the code from January to March 1986, and now PC DISK No. 3—the latest and greatest PC Australia Listing Disk—contains every single program listing in PC Australia from April to June 1986!

If you are getting tired of laboriously typing in by hand all those programming gems contained within the pages of PC Australia, then don't delay—do your fingers a favour and order a PC Listing Disk today for the low price of \$9.50 per disk (inc. P & P).



3M
SS,DD,RH
single side, double density

PC AUSTRALIA
A BSW Publication
DISK #3
Apr - May - Jun
1986
THE INTERACTIVE IBM PC AND COMPATIBLES GUIDE

PC AUSTRALIA
To: Freepost No. 80A, PC Australia, GPO Box 55A, Melbourne Victoria 3001.
I enclose my cheque for \$9.50 (inc. P&P) for each disk payable to PC Australia
Or charge to ☐ American Express ☐ Bankcard ☐ Diners Club
Card No:
Exp. Date: ___/___/___ Please ☐ PC DISK No. 1 ☐ PC DISK No. 2
send ☐ PC DISK No. 3
Mr/Mrs/Ms/Miss: _____
Address: _____
Signature: _____

NOTE PC Australia listings are supplied on top quality 3M disks, which come with a 100% error-free guarantee from 3M and are sent in Floppy Mailers from Prince Computer Supplies (03) 555 1947

Can't decide ?

A.T.S. make it easy . . . with a

FREE PRINTER, MEMORY BOARD AND SOFTWARE

That's right! Buy an NEC 10 or 20 Megabyte system with S.L.E. card (to make it compatible with industry standard software) ... pay only the recommended price and receive at no extra cost . . .

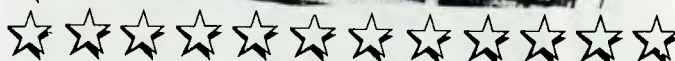
- BROTHER M1509 PRINTER • 512K MEMORY BOARD
- PERFECT SERIES W.P., DATA BASE or SPREADSHEET



OLIVETTI M24

20 Megabyte

640K RAM (with mono, monitor and keyboard)



\$4,740
inc. tax



NEC • OLIVETTI • OSBORNE • TOSHIBA • BROTHER • MICROSOFT • ENABLE
OPEN ACCESS • LOTUS 1-2-3 • S.B.A. • STARBRIDGE • A.T.S. PRACTICE SYSTEM

BEST SERVICE

Why wait about three weeks for Olivetti to fix your computer? A.T.S. service contracts ensure prompt and economical repairs.

BEST PRICES

A.T.S. guarantee to better any genuine advertised price (which is still available) on on any of the above computer products.

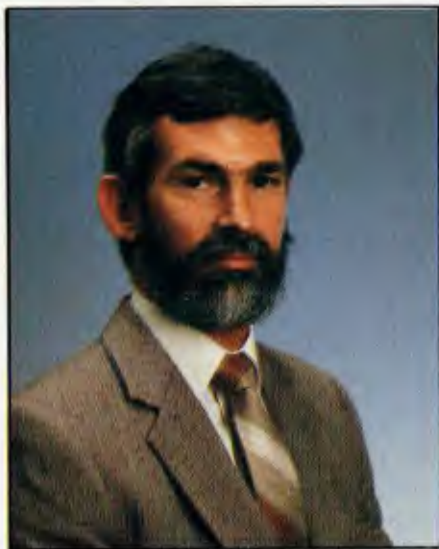
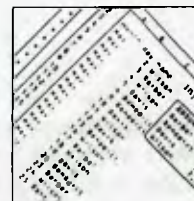
SYDNEY: Phone (02) 858 5999
1039a Victoria Rd., West Ryde 2114
All mail orders and other State enquiries to Sydney office.

MELBOURNE: Phone (03) 690 9196
7th Flr, 96 Albert Rd., South Melbourne
Saturday mornings — phone Sydney office.

A.T.S. COMPUTING

"Advanced Technology + Service"

Letters from afar



Spreadsheet Clinic invites submissions from PC Australia readers. If you have any hints, tips or patches which you would like to pass on to other PC users, send them in to the following address, and the lucky authors of items published will receive a complimentary box of diskettes.

Spreadsheet Clinic
PC Australia
GPO Box 55A
Melbourne Vic 3001

Among this month's selection of letters is one from Norfolk Island. It is good to see that PC Australia is so widely read.

Macros — not Marcos!

Symphony allows you to load an application — but not your macro library — automatically, through its configuration file. One way around this problem is to first amend the configuration settings to attach the Macro Library Manager using /SCOAS (Services, Configuration, Other, Application, Set), MACROMGR.APR, No.

Then amend the configuration settings to search for an auto-load worksheet with /SCA (Services, Configuration, Auto), LOAD.WRI,

and then Update to save the configuration for each time you load *Symphony*.

Finally, create an auto-load worksheet with an auto-execute macro. In this worksheet include this macro:

SERVICES MLMACROS.MLB~Q
SERVICES, NY

Then configure the file to auto-execute the macro with /SSAS (Services, Settings, Auto-execute, Set), highlight the start of the macro, <Enter> and then save the file under the name LOAD.WRI.

Now your macro library is available as soon as *Symphony* is loaded. The only changes that may be necessary are the names of the macro library and auto-load worksheet and perhaps the disk drive names for locating the files.

Duncan Evans
Norfolk Island

Although this example applies to Symphony macro libraries, the same technique can be used in Lotus 1-2-3 or Symphony to automate any desired start-up action. Under 1-2-3 the auto-execute macro is created by giving a macro the reserved name of \0 (note this is the digit zero, not "O").

By the way, I remember auto-execute macros being the topic of a seminar I recently conducted in Perth,

at about the time of the Philippine elections, and a misprint in the brochure had the subject listed as 'Auto-execute Marcos'.

More on Lotus dates

I have found the Lotus 2 macro shown in Listing 1 very useful when non-computer-oriented users, required to enter the date, seem to find it more natural to use the accepted Australian format of DD/MM/YY rather than the US MM/DD/YY format. This macro will accept single or double digit figures for the day or month, and two or four digits for the year. For simplicity, the macro has been located at cell A1 in the listing, and it is called by Alt D (for date).

T. Hammond
Ascot, Qld.

Mr Hammond has displayed some of the power of the string-handling functions in Lotus 1-2-3. However, it is not necessary to get quite so complicated. Both Symphony and 1-2-3 Release 2 will accept the Australian format dates directly as input in the @DATEVALUE function, although it will not be acceptable to specify a four-digit year. In 1-2-3 the /WGDOID (Worksheet, Global, Default, Other, International, Date) command allows you to make a choice of date format. I don't blame Mr Hammond for not finding what must be one of the best-hidden options in Lotus!

```
A1: \D
B1: {=getlabel "Enter date in format DD/ MM/ YY...", b4}~
B2: {=if @ISERR(b9)=1}{branch \D}
B4: '17/3/86
B5: @FIND("/",B4,1)+1
B6: @FIND("/",B4,3)+1
B7: +B6-B5
B8: @MID(B4,B5,B7)&@LEFT(B4,B5)&@RIGHT(B4,2)
B9: @DATEVALUE(B8)
C9: (D1)[W10]+B9
```

Listing 1

SPREADSHEET CLINIC

Preventing escape from a menu

With normal 1-2-3 menus it is possible to hit the Escape key to back up through menu choices and eventually to return to the ready mode. When you write your own menu macros, however, the Escape key will not necessarily get you back to ready mode. Instead, it causes the macro to skip the menu and continue

on with the commands in the cell below the /XM command.

You may not, however, want users to be able to avoid a menu choice by hitting the Escape key, and the chart illustrates a way to accomplish this. The names in column E are range names for the cells to their right. (Cell F14 has both a macro name — \A to start the menus — and a range name.)

	E	F	G	H
4	MAIN	Print	Save	End
5		Print the report	Save the file	End program
6		/xgToPrint~	/fsFILENAME~	/wey
7		/xgToMAIN~	/xgToMAIN~	
8				
9	Print	Align	Page	Quit
10		Align page	Page up	Quit print
11		/ppagq	/pppgq	/xgToMAIN~
12		/xgToMAIN~	/xgToMAIN~	
13				
14	ToMAIN	/xmMAIN~		
15	& \A	/xgToMAIN~		
16				
17	ToPrint	/xmPrint~		
18		/xgToMAIN~		

The trick is to put a /XG (goto) command just below the cells that invoke the menus. In this case, cells F14 and F17 contain the /XM commands that invoke the main menu and the print menu (F4..H7 and F.9..H12). If the user hits Escape after either menu appears, the gotos in F15 and F18 will send him right back to F14, which invokes the main menu.

The /XG commands at the ends of the menu options (cells F7, G7, F12, G12, H11) send the user back to the main menu after the macro has saved the file or printed the report.

Gavin Livingstone

This technique can be extended to duplicate 1-2-3's [esc] key action in a multi-level menu. Say MENU1 calls up MENU2 with a /xmMENU2~. This statement should be immediately followed by a /xmMENU1~. This ensures that if the user hits [esc], while in MENU2, he will return to MENU1.

IBM SOFTWARE EVALUATION

Join the DOWN UNDER SOFTWARE library and take advantage of our unique software evaluation service. Your yearly subscription of \$50 enables you to buy any of the most popular IBM-PC software programs, at our discounted prices of 20% to 50% off manufacturers RECOMMENDED RETAIL PRICE. If the software doesn't meet your needs, return it within 7 days for a refund of

your purchase price less a "RESTOCKING FEE" of 10% of the manufacturers list price. (Minimum restocking fee of \$15)

At DOWN UNDER SOFTWARE there are no High Pressure salesmen telling you what software you need, YOU DECIDE if it is suitable for your purposes.

HERE ARE JUST SOME OF THE PRODUCTS WE HAVE AVAILABLE FOR EVALUATION.

NAME	RETAIL PRICE	DISCOUNT PRICE	RESTOCK FEE	NAME	RETAIL PRICE	DISCOUNT PRICE	RESTOCK FEE
Dbase 3	\$ 976	\$ 750	\$ 98	Wordstar 2000 +	\$ 795	\$ 495	\$ 80
Macro Assembler	\$ 161	\$ 130	\$ 16	Flight Simulator 2	\$ 100	\$ 70	\$ 15
Norton Utilities	\$ 140	\$ 100	\$ 15	Jet	\$ 100	\$ 75	\$ 15
Savvy	\$ 575	\$ 495	\$ 58	Kings Quest	\$ 70	\$ 50	\$ 15
Wordstar Pro 3.31	\$ 645	\$ 420	\$ 65	Sargon 3	\$ 75	\$ 55	\$ 15

For a full catalog, or more information, write or call us on (03) 429-3216

Down Under Software

1 BOTHERAMBO STREET, RICHMOND, VIC. 3121, AUSTRALIA

We don't SELL you software, we help you come to the right decision!



Lynn McDonough, Managing Director of PC Extras

Let me show you how to revolutionise your time and project management with Breakthrough Time Line

Project scheduling and time management — organizing the planning and tracking of events — is something we all do every day. To be successful, we need to bring the right people together at the right places and the right times, and do so at the least cost. We're all project managers!

Breakthrough Time Line sets the standard! It is powerful, flexible, easy to learn and use, and integrates with other popular products. It is essential for the day-to-day management of projects — both large and small! Breakthrough Time Line is a finalist in Software Product of the Year (Your Computer).

Breakthrough Time Line is POWERFUL! You can:

- Schedule an unlimited number of tasks and dependencies (depends on memory), and include an unlimited number of dependencies for any one task.
- Have an unlimited number of resources working on your project.
- Have Breakthrough Time Line automatically level your resource usage to avoid overscheduling your people.
- Partially allocate individual resources, or draw from resource pools.
- Create partial dependencies (leads and lags).
- Combine and summarize schedules to manage large projects.
- Track fixed, variable, and unit costs — up to \$100 million per cost.
- View your schedules in both Gantt and PERT chart modes.
- Print Gantt and PERT charts and various resource/cost reports.

Breakthrough Time Line is FLEXIBLE! You can:

- Examine your resource usage with graphic histogram charts.
- Schedule your tasks as soon as possible, as late as possible, at a fixed time on the calendar, or between two other events.
- Schedule tasks as precisely as to the minute — or in hours, days, weeks, and months.
- Tailor the screen layouts, or view your tasks in "daily glance" and "weekly glance" formats.
- View and report on your projects from any different perspective using Breakthrough Time Line's filtering and selective reporting options.

- Use the "What If" feature to test out strategies.

Breakthrough Time Line is EASY TO USE! You can:

- Enjoy working with Breakthrough Time Line in an intuitive way. Menus and function key commands are designed to mimic the Lotus 1-2-3 method of selection.
- Learn to use Breakthrough Time Line with a diskette-based tutorial that teaches the specifics of the program as well as the concepts of project management.
- Get quick answers from the manual, or from Breakthrough Time Line's on-line, context-sensitive help facility.

Breakthrough Time Line WORKS WITH OTHER PRODUCTS! You can:

- Export your Breakthrough Time Line schedules directly to Lotus 1-2-3 and Symphony, SuperCalc3, Multiplan, and dBASE II & III.
- Export your schedules to other programs using ASCII and DIF formats.
- Refine your Breakthrough Time Line reports with WordStar, Volkswriter, EasyWriter II, and XyWrite II Plus.
- Use Breakthrough Time Line with either a monochrome or a colour display.
- Use any matrix, laser, or letter-quality printer.

FREE! Breakthrough Time Line's brochure and specifications: call (02) 319 2155 now!

p.c extras Pty. Ltd.
(Inc. in NSW)

PO BOX K9, HAYMARKET 2000
(02) 319 2155

In modems, you'll find NetComm stacks up better than the rest.

When it comes to ours or theirs, only NetComm has a modem to suit every communications need.

Whether you require the super-fast performance demanded by major businesses, or everyday low-speed operation (or a combination of both!), you'll find your modem in this table.

You can't go past NetComm: Australia's most-popular, most-proven and best-performing modems — and Australia's biggest range.



NetComm

Total Solutions for Data Communications

NetComm (Aust) Pty Ltd • NSW PO Box 284 Pymble NSW 2073 Tel: (02) 888 5533
 Telex: 7110712811 + (DNC002 DNCT) Minerva: 07:DNC002 Viatel: 288855330
 VICTORIA Suite 4 6th Floor 520 Collins Street Melbourne 3000 Tel: (03) 618 5104
 QUEENSLAND Suite 6 Level 11 AMP Place 10 Eagle Street Brisbane 4000
 Tel: (07) 229 7376

*SmartModem, PC In/Modem and 1234 In/Modem are registered trademarks of NetComm (Aust) Pty Ltd. *TrailBlazer is a registered trade mark of Telebit Corporation.

MODEL	DESCRIPTION	FEATURES	BAUD RATES
SM850	Modem 3+12	MD, MA, ASY	300 FDX, 1200/75 FDX (V21, V23, Bell 103)
SM860	AutoModem 3+12	AD, (PD only), MA, ASY	300 FDX, 1200/75 FDX (V21, V23, Bell 103)
SM890	SmartModem 21/23	AD, AA, AX, AT, ASY	300 FDX, 1200/75 FDX (V21, V23, Bell 103)
SM891	SmartModem 21/23SA	AD, AA, AX, AT, SY/ASY	300 FDX, 1200/75 FDX, 1200 HDX (V21, V23, Bell 103)
SM870	SmartModem 1200A	AD, AA, AX, AT, ASY	1200 FDX, 300 FDX (V22, Bell 103)
SM872	SmartModem 1200SA	AD, AA, AX, AT, SY/ASY	1200 FDX, 300 FDX (V22, Bell 212A, Bell 103)
SM880	SmartModem 2400A	AD, AA, AX, AT, ASY	2400 FDX, 1200 FDX, 300 FDX (V22bis, V22, Bell 212A, Bell 103)
SM882	SmartModem 2400SA	AD, AA, AX, AT, SY/ASY	2400 FDX, 1200 FDX, 300 FDX (V22bis, V22, Bell 212A, Bell 103)
SM840	SmartModem 123A	AD, AA, AX, AT, AR, ASY	1200 FDX, 1200/75 FDX, 300 FDX (V22, V23, V21, Bell 212A, Bell 103)
SM842	SmartModem 123SA	AD, AA, AX, AT, AR, SY/ASY	1200 FDX, 1200/75 FDX, 300 FDX (V22, V23, V21, Bell 212A, Bell 103)
SM845	SmartModem 1234A	AD, AA, AX, AT, AR, ASY	2400 FDX, 1200 FDX, 1200/75 FDX, 300 FDX (V22bis, V22, V23, V21, Bell 212A, Bell 103)
SM847	SmartModem 1234SA	AD, AA, AX, AT, AR, SY/ASY	2400 FDX, 1200 FDX, 1200/75 FDX, 300 FDX (V22bis, V22, V23, V21, Bell 212A, Bell 103)
IN610	PC In/Modem	FI, AD, AA, AX, AT, ASY	300 FDX, 1200/75 FDX (V21, V23, Bell 103)
IN610	1200 In/Modem	FI, AD, AA, AX, AT, ASY	1200 FDX, 300 FDX (V22, Bell 103)
IN615	2400 In/Modem	FI, AD, AA, AX, AT, ASY	2400 FDX, 1200 FDX, 300 FDX (V22bis, V22, Bell 212A, Bell 103)
IN620	123 In/Modem	FI, AD, AA, AX, AT, AR, ASY	1200 FDX, 1200/75 FDX, 300 FDX (V22, V23, V21, Bell 212A, Bell 103)
IN625	1234 In/Modem	FI, AD, AA, AX, AT, AR, ASY	2400 FDX, 1200 FDX, 1200/75 FDX, 300 FDX (V22bis, V22, V23, V21, Bell 212A, Bell 103)
TR100	TrailBlazer	10,000 bps Packetised Ensemble Modem; AD, AA, AD, AT, AR, ASY, EC, 2 wire PSTN	High Speed, 1200 FDX, 300 FDX (Adaptive Duplex, Bell 212A, Bell 103)
TR200	TrailBlazer PC	FI, as above	As above

LEGEND:

MD — Manual Dial	AR — Auto Ranging	ASY — Asynchronous
MA — Manual Answer	AA — Auto Answer	SY/ASY — Synchronous/Asynchronous
PD — Pulse Dial	AX — Auto Disconnect	FI — Fully internal modem for IBM PC or Compatible
AD — Auto Dial	AT — "AT" Command Set	

Data integrity

Power surges can cause severe problems if they occur while a data file is being created. Dan Daetwyler looks at ways of dealing with the matter

Power surges can cause severe problems if they occur while a data file is being created. After the system is rebooted, the user discovers that all data in RAM is lost and all open files are left open.

Consider, as an example, an order entry application, which is made up of customer files, inventory files, and order files, and which supports a number of access paths, or indexes, to those files. All of the system activity is related in some way to access of the database, and, as a result, all primary files are opened when the system is booted. And these files stay open until the end of operations.

A large number of buffers assigned in the CONFIG.SYS file can produce performance advantages for multi-file processing applications running in DOS, such as the order entry example that was mentioned above. However, even when only the minimum number of buffers is assigned, DOS writes data back to disk only when the data required is not already stored in RAM and when no empty buffers are available. Consequently, an increase in the number of buffers assigned in the CONFIG.SYS file increases the amount of data stored in volatile memory.

When a new customer record is added to the order entry file in the example, the indexes are updated for the customer file, an entry is added automatically to the order file, and, finally, the index of the order file also is updated. However, this new information is not written back immediately to the actual file, instead, DOS retains it in memory buffers. Similarly, if the addition of this record has forced the allocation of a new cluster, this information is stored only in the memory-resident FAT, not on disk. Neither the size nor content of the actual file is altered.

If a break in power occurs before all of the new data is written to the disk, it, along with any other data stored only in the memory buffers, is lost.

Data is passed from buffer to disk either when a buffer is required for new data or when DOS flushes all the buffers at the request of the user. A flush of all the buffers can be accomplished with function call 00H (program terminate) or function call 0DH (disk reset). The buffers for a specific file can be flushed with function call 10H (close file) or function call 3EH (close a file handle).

Suppose a new customer record is added in the order entry file that forces the allocation of a new cluster. Updates are made in the FAT, and, as the result of subsequent I/O, are forced out to disk. The new record also may be written to the disk; however, the key in this case is not the record but the directory. If the file is not closed and a break in power occurs, the directory may not be written back to disk.

When the system is rebooted, both an incorrect FAT and directory exists for that open file. The FAT points to a record that is outside the allocation of the master file. The record may have been written, but when the user attempts to access it an I/O failure occurs. The FAT says the record is present, but the file is unable to locate it. If the FAT made it to disk before the break in power, a CHKDSK with the /F parameter in DOS will correct the problem.

This kind of problem is inherent in any on-line system environment. Each separate applications system, or short job, within the environment remains in the memory buffer only as long as actual processing is taking place, and file integrity is fully restored each time that the file is closed. However, in such an environment, database files typically are not closed until the termination of the entire system at the end of each day. As a result, the data stored in memory buffers remain unprotected and vulnerable.

One solution to this problem is to close a file immediately after it has been updated. This, however, necessitates reopening the file for each use. DOS is reasonably quick when closing a file, but can be excruciatingly slow when opening one because of the directory search it must perform.

Another solution that reduces the chances of data loss involves generating duplicate file handles using INT 45H (mnemonic DUP). DOS maintains the file control block (FCB) in memory and provides a handle that can be used to read, write, or close a file. DUP provides that, when an existing handle is placed in the BX register and a call is made, DOS returns a duplicate handle for that file in the AX register.

Each time a file is updated, the user can create a duplicate file handle and use it to close the file. The records, the FAT, and the directory entry for that file are all written from memory safely back to disk. Moreover, the user does not need to reopen the file after the file information has been forced out to disk because the original file with the original file handle is already open — it was never closed.

Detecting the state of the buffers for a program under execution on a PC is difficult. However, if a compiler uses DOS calls and file handles, this technique works as outlined. Unfortunately, most compilers currently use FCBs to the exclusion of file handles; they are intended for use with DOS versions 2.0 and earlier, which do not employ file handles.

However data still can be lost in the interval existing between the start of a file update and the pseudo file close. ■

Dan Daetwyler, now retired, worked for 20 years as a systems architect with IBM.

MicroMania

SOFTWARE

Auditor Version 2	181
Chart	369
Clipper	725
Copywrite	85
Crosstalk XVI	150
DAC Accounting - Aust. Ver.	175
DAC Word	99
Daybook - Accounting Cashbook	149
Dbase II	499
Dbase III Plus	689
Desktop Publisher	899
Desqview	120
Executive Filer	95
Executive Writer	95
Fastgraphs	289
Flight Simulator	87
Framework II	730
Gem Desk Top	84
Graphwriter	760
Harvard Presentation Graphics	499
Info. Bus. Manager	436
Javelin	999
Jet	85
Knowledgeman	729
Lotus 1-2-3	525
Multimate 3.31	519
Multimate Advantage	595
Multiplan	285
Norton Utilities	115
Open Access	695
PC Tutor	89
PFS File	159
Paradox	829
Popup	99
Printmaster	84
Printworks	120
Ready!	79
Reflex	140
Remote	168
Samna III	635
Sidekick	67
Sideways	79
Smart Package	839
Spellbinder	575
Statpak	513
Super Calc III	517
Superkey	99
Superproject	552
Symphony	699
Timeline	565
Transporter	79
Turbo Database Toolbox	88
Turbo Editor Toolbox	88
Turbo Gameworks	88
Turbo Lightening	117
Turbo Pascal BCD	120
Turbo Pascal	88
Turbo Pascal 8087	124
Turbo Pascal BCD & 8087	150
Turbo Pascal Graphics Toolbox	80
Turbo Pascal Toolbox	75
Turbo Prolog	149
Turbo Tutor	53
Twin - 123 lookalike	189
Typequick	69
VP Planner	158
Windows	160
Word	443
Wordperfect	499
Wordstar	299
Wordstar 2000	435
Wordstar 2000+	449
Wordstar Professional	430

Customer of the Month..



"I searched everywhere for low prices on software. Micromania came through with amazing prices and excellent service."
Dr. Guy Bashford.

SUPER HOT SPECIALS!!!

Dac Accounting	175	20 Meg Hard Disk	995
PC In Modem	495	Dbase III Plus	689
Norton Utilities	115	Wordstar 2000+	449
Turbo Pascal	88	Symphony	699

(02) 569 0232

180 Parramatta Rd, Stanmore N.S.W. 2048

All prices include sales tax. We accept Bankcard, Mastercard and Visa. Phone (02) 569 0232 to place an order or send a cheque or money order to Micromania, 180 Parramatta Rd., Stanmore N.S.W. 2048. All products carry full distributors warranty and support and are latest release versions. Delivery extra - phone for rates. Prices may change due to factors beyond our control. All customers will regularly receive a copy of our online ordering program to run on their PC or Compatible, containing the latest product details and pricing.

HARDWARE

80287 AT Maths Coprocessor	417
8087 Maths Coprocessor	265
8087-2 Maths Coprocessor	357
AST - Megaplug - 64K	606
AST - Sixpak Plus + Sidekick	399
AST Advantage	895
AST Rampage - 256K	599
AST Rampage - AT 512K	1049
EGA Compatible Card	699
Intel Above Board - AT	850
Intel Above Board - PC	579
Microsoft Mouse (Bus)	239
Microsoft Mouse (Serial)	239
Monitor - Colour 14" RGB	639
Monitor - IBM TTL Amber	259
Monitor - IBM TTL Green	259
PC Colour Graphics Card	159
PC Floppy Disk Controller	114
PC Mono/Graphics Card	175
PC Multi I/O Card	249
PC Parallel Card	80
PC Serial Card	80
Parallel Printer Cable - PC	35
Power Supply (135 W)	199
Seagate 20Mb Hard Disk Kit	995
Speedemon - 10Mhz for PC	899
Tape Backup - 20 Meg AT	1499
Tape Backup - 20 Meg PC	1199
Fuji DS/DD 3 1/2" Disks	75
Fuji DS/DD 5 1/4" Disks	36
Fuji SS/DD 5 1/4" Disks	27

PRINTERS

Brother 1509	749
Brother HR15XL	679
Brother HR35	1409
Brother HR5	209
Brother M1109	389
Brother Twinwriter	1899
Epson FX105	1080
Epson GX80	440
Epson LQ1500	1699
Epson LX80	475
NEC P3 Colour	1383
NEC P3 Pinwriter	1149
NEC P5 Pinwriter	1699
NEC P6 Printer	939
NEC P7 Printer	1198

MODEMS

Imagineering Le Modem	490
Netcomm 1200 In Modem	787
Netcomm 123 In Modem	1099
Netcomm 1234 In Modem	1399
Netcomm 2400 In Modem	1049
Netcomm 3 + 12 Manual	265
Netcomm PC In Modem	495
Netcomm SmartModem 1200	799
Netcomm SmartModem 1234A	1669
Netcomm SmartModem 2400	1099
Netcomm SmartModem 123A	1359

Like a Vegemite sandwich?

The Down Under BBS started with a dream in 1978 — in fact it was a Dream 6800 kit computer, built by Greg Hudson when he was 24 years old.

"It had a massive 1K memory," he recalls. "All programming had to be done in hex and there was no external storage. So when you switched it off you had to be ready to program it again." Now, users of the Down Under BBS know that each time they log on they might find a new feature carefully written into the program. The main menu often offers a surprise.

"I decided to start the BBS on August 4, 1985 for the public benefit," Hudson says. "I chose the name, Down Under, because I was selling software in the US and wanted a distinctively Australian name". The software was *Star Trek Adventure*, a text file adventure game with fine graphics, written by him originally for the TRS 80. It was adapted first for the Peach computer and at \$15 is a bargain for the IBM PC and compatibles.

In less than a year the Down Under BBS has attracted between 40 and 50 users each day, with a few more at weekends. There are around 360 regular users and over 600 irregular users. Only 13 women use the board. Most people spend between 20 to 30 minutes on the BBS. If you do not manage to log on at your first call, keep dialling!

Hudson has added 15K of source code to the original 35K program running the Down Under code to the original BBS to support a host of original features. The improved program has been turned into a standard ASCII BASIC file, which is still under 30K for the whole BBS because it is compiled. In the downloadable files area, selective directories are available including Communication, Finance, Games, Music, Newfiles, Pictures, Unprotection and Utility categories.

The board is used to promote products which Down Under Software has for sale, plus special monthly deals.

The main users are businessmen and students from the Royal Melbourne Institute of Technology. Asked to predict developments in BBS here in the next two years, Hudson is not modest. "They'll just have to keep up to me," he says. "I'm in the process of writing a multi-user interface with the Down Under BBS. It will have an interactive chat mode. I believe that is not available on any other BBS in Australia at the moment."

When this feature is added, three people at a time (two external users and the sysop using a local console) will be able to use it. However, Hudson is planning to expand it with 10 Telecom lines.

Down Under BBS runs on a PC clone which sports 640K, two serial ports, parallel and joystick ports, clock/calendar, a DTC hard disk controller, two outputs to run color and monochrome monitors simultaneously, two Chinon 360K floppy disk drives and a 22M Tandon hard disk. A NetComm 2123 SmartModem logs callers in at 300 baud and 1200/75 and another NetComm SmartModem 1234 connects at 300, 1200/75 and 2400 baud.

Recent figures show that a surprising 51 per cent of calls come in at 1200/75 and 49 per cent at 300 baud. (This was before the 2400 baud access became available). Down Under BBS has probably become so popular because it is continually evolving. Like a Vegemite sandwich, it is distinctly Australian, and very addictive.

Robin Howells is a prolific PC communicator who can be contacted on the Down Under BBS

Down under BBS



Sysop: Greg Hudson

Phone number: (03) 429 5819 or 429 8079 (2400 baud only).

Hours of operation: 24 hours

Baud rates: 300, 1200/75, 2400

Protocol: 8 data bits, 1 stop bit, no parity (all modes).

Access: Free. (Users can make a voluntary \$10 contribution. Correct names and suburbs are required).

Time limit: No daily limit but 60 minute maximum per call. Files for downloading: Around 250, all for IBM PC and compatibles. Another 15M of software now on floppy disks is to be progressively added to the hard disk as it is evaluated.

Comments: Devoted Sysop ensures that the appearance of this BBS is often changing in subtle ways. Top Ten users listing could be a definitive guide to some BBS fanatics. Messages are a good mix of technical, personal, humorous and 'neighbours over the back fence'. Useful utilities always appearing among downloadable files. Very busy board.



Bulletin board

PC User Groups

MELB-PC

Contact: Garry Bryant (03) 615 4844
Time: 6.00pm first Wednesday
Venue: Clunies Ross House
191 Royal Parade
Melbourne

Sydney PC User Group

Contact: Catherine Rosenbrauer
(02) 29 7033
Time: 5.45pm third Monday
Venue: Esso Auditorium
35 Clarence Street
Sydney

Perth PC Micro Users Group

Contact: Peter Goodwin (09) 274 5911
Time: 5.30pm first Tuesday
Venue: Royal Kings Park Tennis Club
Kings Park Road, West Perth

Adelaide PC Users Group

Contact: John Roberts (08) 212 5020
Time: 7.45pm second Thursday
Venue: 195 Gilles Street

PC Users Group Inc. (ACT)

Contact: Chess Krawczyk
(062) 80 5954
Time: 8.00pm final Monday
Venue: Coombes Lecture Theatre
Australian National University

Brisbane 16-Bit Users Group (BRISBUG)

Contact: Roy Willie (07) 393 3388
Time: 2.00pm third Sunday
Venue: Toowong State High School
Bywong Street, Toowong

Viatel Users!

Don't forget to
check out page

*60063 #



BBS Directory

Victoria

PC Connection IBBS (03) 528 3750
HiSoft IBBS (03) 799 2001
The National (03) 819 5582
Down Under (03) 429 5819

New South Wales

PC Exchange (062) 58 1406
PC User Group (02) 238 9034
Micro Design Lab (02) 663 0150
Sydney Public Access (02) 808 3536
Prophet RBBS (02) 628 7030
Dick Smith IBBS (02) 887 2276
Tandy BBS (02) 625 8071

South Australia

Adelaide User Group (08) 271 2043

Queensland

Competron (07) 52 9498

Western Australia

Perth PC Users BBS (09) 227 9229

APPLICATIONS USER

SOFTWARE GROUPS

Multiplan Users Group

Address: PO Box 95, Forestville, NSW 2087.
Contact: Richard Womack (02) 997 1554.
Meetings: 6.15pm 2nd Wednesday, MTE
Centre, 2nd Floor, Cnr York and Market
Streets, Sydney.

dBase Users Group (includes Framework SIG)

Address: ACS, 72 Pitt St, Sydney 2000
Contact: Catherine Rosenbrauer (02) 74 1961
Meetings: 6.30pm 3rd Tuesday, ACS, 1st Floor,
72 Pitt St, Sydney

Spellbinder User Group

Contact: Kathie Hanson
Meetings: 6.00 pm fourth Monday, Room 9,
Trades Hall, Cnr Dixon and Goulburn Sts,
Haymarket, NSW 2000.

NOTICE.
If you have any further
PC community information
for this bulletin board,
Contact the Editor,
Ian Robinson on (03) 6024122

SPECIAL INTEREST GROUPS

The PC User Group in Sydney has spawned a number of special interest groups (SIGs) which meet at varying times throughout the month.

ComSIG — 5.45pm second Monday, ACS, 1st Floor, 72 Pitt St. Contact Geoff May (02) 699 3518.

BusinessSIG — 5.45pm fourth Tuesday, Peat Marwick, 31st Floor Australia Square, Pitt St. Contact John Pitera (02) 499 2400.

CHUSIG (Challenger PCs) — 5.45pm 2nd Tuesday, 4th Floor, 80 Arthur St, North Sydney. Contact Geoff Townes.

Prevent PC gremlins . . .



. . . with PC Australia!

PC
AUSTRALIA

The interactive guide to IBM PCs and compatibles

Turbo Pascal User Groups

Victoria

Address: PO Box 81
East Caulfield Vic. 3145
Contact: Ron Savage (03) 651 1414
Meetings: 7.00pm 1st Wednesday
Institute Function Room
Union Building, RMIT

Western Australia

Address: 73 Outram Street
West Perth WA 6005
Contact: Aaron Regan (09) 322 1834
Meetings: 7.30pm 2nd Tuesday
2/294 Rokeby Road Subiaco

Lotus User Groups

Melbourne

Contact: Robert Taylor (03) 267 4800
Time: 5.30pm first Tuesday
Venue: Light Car Club, 46 Queens Rd

Sydney

Contact: Ron Pollak (02) 290 3655
Time: 5.45pm first Thursday
Venue: National Bank, 12th Floor,
255 George St

Perth

Contact: Peter Foreman (09) 322 5589
Time: 5.30pm second Wednesday
Venue: KMC Hungerford, 9th Floor,
190 St George's Tce

Adelaide

Contact: Paul Wragg (08) 223 5711
Time: 7.30pm first Tuesday
Venue: 173 Wakefield St

Brisbane

Contact: Bill Savage (07) 221 2144
Time: 5.30pm first Tuesday
Venue: Duesbury's, 28th Floor, 239 George St

Newcastle

Contact: Louis Lee (049) 26 8692
Time: 5.35pm first Thursday
Venue: Newcastle Gas Company, 623 Hunter St

GURU™

ARTIFICIAL INTELLIGENCE THAT MEANS BUSINESS.

Database
N E T W O R K

Suite 3/83 Glen Eira Road, Ripponlea, Vic. 3183

Ph: 523 8222 Telex AA135042DBASENET

A PC that's more powerful than the market leader & costs around \$2000 less...

The new Sharp PC-7000

- Fully compatible
- Unbeatable value
- Fully transportable
- Optional clip-on printer
- Built-in 5 1/4" disk drives
- Illuminated crystal display screen
- Real power - 384K RAM, expandable to 768K
- Sharp quality.



...we've got it!

JME COMPUTER SYSTEMS

26 Smith Street, Collingwood, Victoria 3066
Telephone: (03) 419 8919

SHARP®

Simply the best in Computers

A rural influence

How about this videotex fans — a complete issue of PC Australia devoted almost entirely to PC videotex! After months and months of energetic lobbying, pushing for a videotex cover story, I have finally tasted victory. Mind you, the Videotex 86 exhibition and conference (held July 1-3) certainly helped my case.

Many of the more recent converts to PC videotex could be excused for thinking that videotex and Viatel are one and the same, but nothing could be further from the truth. In fact, videotex is a generic term, and Telecom's Viatel is simply one of a number of videotex services PC users can tap into. In the past I have discussed other services such as BERT, but perhaps the largest and most popular videotex service after Viatel is that provided by Elders-Pastoral (a division of Elders-IXL).

Elders Farmlink service was so named because of its original aims of providing a wide range of information services to the company's large rural customer base. Since its inception, however, the system has expanded to accommodate more business users. This is reflected in the success of its new Sharelink service, which offers access to all Australian stock exchanges and information such as company reports and economic commentaries.

For those used to communicating with Viatel, logging in to Elders Farmlink for the first time offers quite a few surprises, for the host system is actually running a superset of the standard Prestel as used by Telecom. Facilities such as keyword search and frame co-ordinate addressing are fully supported by Farmlink, resulting in more flexible frame formats. Once you get used to keyword searching in particular, it is hard to go back to Viatel and remembering all those frame numbers.

Elders Pastoral began trials of its

videotex system in March 1983 with a view to establishing a communications network throughout its many country offices. This grew into what has now become Australia's largest privately-owned videotex service with almost 3000 registered subscribers.

Another noticeable feature of Farmlink, when compared to Viatel, is the absence of any frame charges — all costs are based on connect time only. So those of us who have customised our PC software to automatically dial up, leap in and grab the appropriate frames and leap out again are well in front.

Access charges for Elders Farmlink are \$8 an hour during peak time (8.00am to 6.00pm) and \$6 at other times. Of course, in addition there are the normal Telecom charges of 16 cents a call and \$2 an hour in Melbourne, Sydney and Adelaide (where the Farmlink system is based). Users outside these areas have to pay the Austpac charges of \$10 in peak times and \$7.50 off-peak. Elders Pastoral spokesman Tim Ryan claims this works out to be much cheaper than Viatel over the longer term, particularly in the metropolitan areas.

PC users with a suitable videotex (1200/75) modem and decoding software also must pay a subscription fee of \$149 a year and educational institutions are charged \$50 annually. Volume discounts are offered for organisations with multiple users.

The Elders Farmlink directory is almost as big as that sent out by Viatel, but the subject matter is decidedly more oriented to the rural community. Livestock slaughter and auction reports (sheep, cattle, pigs, goats), export beef and lamb statistics, wool reports (including shearing guidelines, branding codes and Wool Corporation publications), grains and cereals information (wheat, oats, barley, oilseed), fruit and vegetable market data — it is all on Farmlink.

The ever-expanding business and finance section will interest most of my professional city-based jet-setting decision-making readers. (You can probably guess that I have been reading the preliminary results of our recent questionnaire.) Some of the goodies include futures prices (trade steer, greasy wool, fat lambs, gold, silver and bank bills), call and term deposits, equity trusts, interest rates, real estate finance and — very important for this time of the year — comprehensive taxation information.

The Bureau of Meteorology provides a very comprehensive database on Farmlink, so if you are interested in the rainfall in the Hunter Valley, see page *7524123#, or perhaps the height of the Murray River, see page *38231721#. Boating forecasts and strong weather warnings can also be obtained, as well as the forecasts for all capital cities and major provincial centres.

All of the expected 'housekeeping' features exist on Farmlink, including electronic mail, password changes, telex facilities, user and information provider directories, keyword search directory, system news and even a beginners' guide to videotex. An interesting feature is the 'Calculators' section, where users can calculate anything from net return on livestock to total fertilizer requirements, all drawing on current market prices.

With information providers as diverse as the Royal Flying Doctor, WA Wine Brokers, Deakin University, Price Waterhouse and LBI Building Products, the Elders Farmlink system is definitely worth browsing through. And as the business and finance sections of the database expand, you can expect to see Elders Farmlink taking an increasingly larger profile in the PC videotex area. Those keen to see the system for themselves can probably organise a look by contacting Tim Ryan at Elders Pastoral on (08) 218 4621. ■

The Cheapest

We offer you the opportunity to test our boast. The Computer House will better any price on any computer item from any other dealer.

Try us, you won't be disappointed.

Ring now on (03) 699 2000

Our Guarantee

We guarantee to find you the lowest prices in Australia. The lowest prices on a complete range of products backed by Australia-wide maintenance and service.
Guaranteed Service. Guaranteed Savings. Guaranteed Satisfaction.



Software

Spreadsheets	
Lotus 123 Rel. 2	535
VP Planner	159
Javelin	945
Database	
dBase III Plus	695
Paradox	695
R Base	Call
Reflex	157
Word Processing	
Multimate Products.....	Call
Wordstar.....	299
Word	490
Wordperfect	449
Samna	Call
Integrated	
Open Access.....	Call
Knowledgeman.....	690
Framework II	695
The Smart Series.....	786
Symphony	695
Enable	765
Utilities	
Sidekick	89
Norton Utilities	Call
Sideways.....	78
PFS file.....	181
Gem Desk Top	99
Microsoft Windows.....	158
Languages	
Microsoft.....	Call
Turbo Pascal	99
Systematic.....	Call
Accounting	
Inc. Sybiz, I.A.L. Integrity, etc.	Call

Hardware

System Units	
Profound IBM Compatible....	from 1295
Olivetti	Call
Sharp 7000.....	Call
Hard Disks	
10 MB Internal.....	from 850
20 MB Internal.....	from 950
Bigger than 20 MB.....	Call
Many brands available	
Hardcards	
The Hardcard by Plus 20MB ..	1790
Mountain Drivecard 20MB	1990
Tape Backup	
Internal & External.....	Call
M'Function & Memory Boards	
AST 6 Pack	536
Intel Above Board PC	595
Intel Above Board AT.....	895
Persyst Color Combo Board ..	699
Multifunction Card.....	242
Other Memory Boards from ..	299
Display Cards	
Hercules Graphics Card.....	740
Hercules Colour Card (short) ..	346
BOB 16 Board.....	1120
132 Column Adaptor.....	445
Other Brands	from 295
Monitors	
Mono Green or Amber	from 245
Colour	from 545
Genuine High Res. Colour	from 878
Modem	
Complete Netcom Range.....	Call
Communications	
Crosstalk	175
Smartterm (Dec. DG	
Emulator)	Call
Reflection (HP Emulator)	Call
3270 Products - local &	
remote	Call
Entertainment	
Jet	89
Zork I, II or III.....	65
H/Hikers Guide to the Galaxy ..	65
Gato	65
King's Quest.....	65
and many more	Call
Project Management	
Harvard Project Management ..	490
Super Project	467
Microsoft Project	Call
Supplies	
Complete range including	
diskettes, tapes, printer	
ribbons, paper, manuals, etc..	Call

Printers

Epson LQ 1000	1345
Epson LQ 800.....	1145
NEC P5.....	Call
NEC E.L.F.....	689
Many other brands	Call
Lazerjets - Thermal -	
Daisywheel - Color - Inkjet ...	Call
Other Boards & Peripherals	
Microsoft Mouse	Call
Printer Adaptors.....	Call
Power Supplies	Call
Networks (3 Com	
Specialists).....	Call
Digitisers	Call
Cables	Call
Terminals	Call

REMEMBER

If what you require is not listed
RING US and we'll get it.

Plus

- FREE HOTLINE SERVICE
- IMMEDIATE* REPLACEMENT OF ANY DEFECTIVE STOCK
(*Subject to availability.)
- TRAINING ARRANGED
- EXPERT ADVICE
- AUSTRALIA WIDE MAINTENANCE



Delivery

- Anywhere in Australia for \$7.50 (under 3kg.)
- Overnight on request.
- Goods over 3kg. are charged at Post Office rates.



- Prices are subject to change without notice.
- All prices quoted include Sales Tax.
- Terms: Payment on receipt of goods.
- Bankcard, Mastercard, Visa accepted.

WE RENT COMPUTERS

The Computer House

Phone now (03) 699 2000

27-33 RAGLAN ST SOUTH MELBOURNE.



Coming up

Where would we be without those printing, backup, formatting and organising routines which go under the general heading of 'utilities'? **Les Stein** homes in on some of his favorite and most useful utility programs in the August issue of *PC Australia*.

And for readers requesting more technical PC features, there will be a hands-on article describing how to write color display update routines for the PC without generating 'snow' on the screen, by utilising the retrace periods between scans. If you are into low-level PC programming, this is a feature which cannot be missed.

Do not forget our regular department pages, which will again inform, provoke and entertain you in the country's leading PC and compatibles publication.



A Binding Relationship

Are you worried that constant handling of and reference to your copies of *PC Australia* will damage them? Well, you can breathe more easily now because *PC Australia* binders have arrived at last!

They offer the perfect solution to the information overload problem, keeping up to a full year's supply of magazines neat, tidy and ready for reference.

Designed in the attractive

red and white color scheme, of the PC logo, the binders will make an invaluable addition to any PC user's workplace.

For only \$12.50 each, including post and packaging they are a bargain not to be missed, so clear out a space (close to the PC of course), dig out all your back issues from their various hiding places, and send off the coupon now (no stamp required) with your payment.



The interactive guide to IBM PCs and compatibles

To: Freepost No. 80A, *PC Australia* Binders, GPO Box 55A Melbourne Victoria 3001.

I enclose my cheque for \$12.50 (inc. P&P) payable to *PC Australia*

Or charge to

☐ American Express ☐ Bankcard
☐ Diners Club

Card No:

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

Exp. Date: ____ / ____ / ____

Please send ☐ *PC Australia* Binder(s)

Mr/Mrs/Ms/Miss: _____

Address: _____

Signature: _____

Return to Eden



I shivered as the plane touched down in Perth. After nine months of zooming around in the whirlwind of US computer activity, how could I possibly return to the Australian crawl? Day after day I was part of the insane fantastic activity of Silicon Valley.

I had spread rumors over two martini lunches, shuttled back and forth to Silicon Valley in the helicopters of venture capitalists and had packed full a 70M hard disk and new ideas. Now it was back to "G'day mate" and lying in the pool until my skin wrinkled.

After days of deep depression I yanked the old PC from storage. I thought that perhaps the sight of the old fellow might get the residual mercury of California coursing through the arteries. Possibly I could bring a bit of the magic home. I flipped the switch and the PC wailed and died with the foul smell of an LA morning smog.

Great — just the thing for a depressive on thin ice.

I phoned my local dealer, expecting

them to blubber away and then do nothing. Just 10 minutes after my call (no exaggeration), a repairman was at the door. We had a good old natter about shoddy products and how the world used to be when granny was a toddler. He left me with a small bill, a forthright handshake and a feeling of goodwill.

This is the Australian experience. I once again saw the Perth sun, heard the birds singing, felt the cool breeze. (Actually, it was raining but you get the general idea.)

We are still fortunate enough to have the human quality here which is so missing in the US computer experience. All my computer dealings in Australia (with a few exceptions) have proceeded on a basis other than me being regarded as a walking wallet. But are 'down home' values all we have — our sole contribution to the PC scene?

We do not invent, we merely sponge off the US computer excitement and savor new product announcements as if they were our own. Are we just some third-rate developing country that goes ga-ga over American accomplishments? Are we living in a computer wasteland controlled by the likes of Bill Gates and John Scully?

You're damned right we are. Except for FBN, Attache and two or three others, we appear to have no impact on the world PC market. We are end users — and I mean end. And this is our greatest advantage.

In California I was aware of every little product change, every rumor and all possibilities. Each day brought a flood of magazines, bushels of product announcements and gaggles of software. At one time I had seven hard disk managers in my root directory (I would call up one from another until the disk gagged).

I became DOS shell-shocked, word-processed, debased and completely

menu-mauled. I had to set alarms (on one of a dozen pop-up programs) to remind me to eat.

The situation got worse and worse until one day I found myself staring out the window and dribbling.

Dear Readers, I believe the level of obsession varies directly with the number of programs you fiddle with. Sit five of the best word processors on your desk and you will spend countless hours before you settle into one. Add a constant awareness of what new products are on the way and you will be utterly confused. At least I was.

Months before leaving the US I began looking for an EGA graphics board and monitor. The problem was that I knew Paradise was coming out with a new multi-display board using a new chip and Hercules was about to introduce a new standard. I never did make up my mind.

I now sit quietly at my desk with the same three or four programs I have always used clunking along on the old IBM PC Mark I. My speed-up 286 boards and super duper gimmicks are unopened in their boxes alongside art posters from famous museums and lairy shirts from Hawaii. They all seemed great ideas at the time.

I would not quite call it splendid isolation nor argue to you that small is beautiful. I do know that computers never deserve the centre of attention and we have a subtle advantage in being out of the action. Let the Americans bust a gut and give us new tools. There is no need to be in touch with every minor computer event or product.

I like to believe that Australia is the place for sincere innovation. We have intellectual fresh air, uncluttered by fear that competitors will overtake us when we pause. For computers, our isolation may be our weakness, but more probably our strength. ■

IBM PC USERS

BRISBANE (07) 378 4798

\$1690

\$6395

\$595

\$11299

\$850

\$715

\$399

\$505

\$695

\$1875

\$675

\$1599

TANDON
20MEG **\$1095**

**SEAGATE
20MEG \$995**

TAPE BACKUP UNIT LOCAL ASSEMBLY

\$1630

Symphony.....	\$715
Lotus 1-2-3 Release 2.0.....	\$505
dBase III plus.....	\$675
Wordstar Propak.....	\$485
Wordstar 2000 Plus.....	\$499
KnowledgeMan.....	\$750
Crosstalk.....	\$175
PC Draw.....	\$650
Flight Simulator.....	\$95
Microsoft Chart.....	\$400
Microsoft Windows.....	\$189
Microsoft Word.....	\$499
Diskette Manager II.....	\$95
Disk Explorer.....	\$95
CopyWrite (copies anything).....	\$93
Framework II.....	\$750
Typequick.....	\$89
Smarterm 100.....	\$195
IBM PC Storyboard.....	\$695

SYDNEY: 2nd Floor, 156 Pacific Highway,
St. Leonards 2065.
Phone: (02) 439 7043, (02) 439 7500.

MELBOURNE: Ground Floor, 582 St Kilda Road,
Melbourne 3000.
Phone: (03) 529 3282.

BRISBANE: 2039 Moggill Road,
Kenmore 4069.
Phone: (07) 378 4798.

**ALL PRICES SUBJECT TO CHANGE
3% DISCOUNT FOR CASH.**

ALL PRICES INCLUDE SALES TAX.

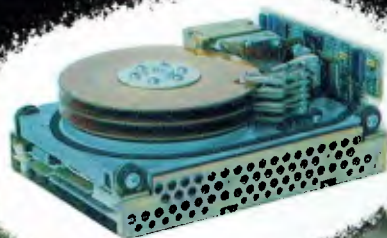
**PLEASE COME IN AND SEE US TO
DISCUSS YOUR PC REQUIREMENTS**

HOTLINE toll free (008) 22 6981

Hercules Color Card.....	\$290
Quibie 6 pack (384K).....	\$435
Monographics Card.....	\$350
Comtronics H/R.....	\$550
Comcolor.....	\$340
Piggy Plus.....	\$280
Serial Plus.....	\$65
Floppy disk Tandon (Full).....	\$250
(Half).....	\$235
PCox Standard (IRMA compatible).....	\$1299
Hard disk = 10Mb internal.....	\$995
= 20Mb internal.....	\$1095
64K chips.....	\$25
8087.....	\$265
80287.....	\$450
8087-2.....	\$450
Monitor	
Kaga III color.....	\$770
Kaga Vision IV.....	\$1065
Quibie color.....	\$695
NEC P5.....	\$1599
Epson FX 105.....	\$999

"...Sherman tank of hard disk drives."

-InfoWorld
July 22, 1985



HAVE A NICE INQUISITION, DEAR.

When Infoworld's contributing editor, Bernie Zilbergeld and the InfoWorld Review Board said they reviewed our ATplus20™ hard disk drive, we figured that they gave it the routine technical and performance diagnostics.

We didn't expect *destructive* testing. They went after our legendary resistance to head-crashes with a vengeance.

HOW TO HENCH.

Mr. Z and his henchpersons began by subjecting the drive to 3,500 stops and starts.

Having survived this, our ATplus20™ drive then had to face increasingly severe physical torture while performing a seemingly relentless series of track seeking operations.

THINGS THAT GO BUMP IN THE DAY.

Further henching resulted in their bumping the table that the ATplus20™ was running on.

Then they *dropped* one side of the table from a height of six inches.

Next, the entire table was lifted one foot above the floor and dropped.

After cutting power to the drive (thus interrupting the seek test) they bumped the table severely, to see if the ATplus20's unconditional and automatic park and lock feature really makes a difference.

Then, they threw the book at us. Actually, they dropped a rather heavy book *directly* on top of the drive itself.

GUESS WHAT?

You're absolutely right. CORE's ATplus20™ hard disk drive not only survived, but continued to perform as specified.

Each of the rather unnerving tests was repeated a number of times on the same drive, just to be extra sure.

Or mean.

THE LAWYER'S 2¢.

The tests were so nasty that they had to publish the following warning:

"We caution you not to perform any of these tests on your own equipment."

We have to agree.

These tests were done to determine the limits of the drive, and were intentionally extreme beyond the normal use environment.

SEAL OF APPROVAL.

We're delighted that InfoWorld tested, evaluated and *validated*, exactly what we have been saying all along: *Now you can build the enhanced PC-AT that IBM didn't.*



DOS, XENIX & MORE.

Along with the highest *reliability* among PC-AT compatible drives, we offer *full compatibility* with PC-DOS 3.0 and higher.

And XENIX™ compatibility with CORE's ATplus™ XENIX update.

A significant number of ATplus drives are running under the IBM, NOVELL and other networks.

Those users are delighted with our speed and performance.

PEACE OF MIND.

ATplus™ drives come with a full one-year warranty, supported by CORE and other major maintenance service companies.

Thus, we offer you a choice of on-site, local, or exchange maintenance services.

Known as CORE's Sudden Support™, all services are extendable to your entire AT system, and after the warranty runs out.

WE'LL BE AROUND.

We're the world's largest supplier of high-performance PC-AT compatible hard disk drives.

Now, respected magazines such as InfoWorld and PC Magazine have told you how we got there.

Please contact us directly for full and unedited reprints of this and other prominent computer magazine reviews.

SQUIRREL SYSTEMS BRISBANE 395 7277 ... SYDNEY 922 4401 ... MELBOURNE 267 8963